Aristotle's De Anima: A Guide

José Luis Bermúdez

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Figures

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Note on Texts

José Luis Bermúdez

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Translation

In the interests of terminological consistency, I refer to a single translation of the *De Anima* throughout. Although there are several good, recent translations out there, I have used Christopher Shields's translation and commentary in the Clarendon Aristotle Series (Shields 2016), because readers of this book are likely to find his detailed commentary very helpful. The only change I have made to the quoted texts from the *De Anima* is to replace the word "soul" with the transliterated Greek word *psuchê*, for reasons explained in Chapter 1. At a few points, I have suggested alternative possible translations in the footnotes.

For other works by Aristotle I have typically referred to translations in the *Revised Oxford Translations of the Complete Words of Aristotle* (Barnes 1984, henceforth abbreviated as ROT), although for translations from the *Parva Naturalia* I have used the recent translations by Fred Miller included in his Oxford World Classics translation of the *De Anima* (Miller 2018).

For all Aristotle translations, I have given references in the standard Bekker format, using the Greek text, which does not always map exactly onto the line numbers in translations.

Texts

The most easily available Greek text is the first of Ross's two editions in the Oxford Classical Texts series (Ross
p. xii 1956). Ross 1961 ↳ updates the text and also includes a useful introduction and commentary. Valverde 2019 is the most recent edition (with commentary, translation, and a useful introduction on textual matters—all in Spanish), building on the work of Pawel Siwek, which is unfortunately rather hard to get hold of.

Vade mecum

The most authoritative line-by-line commentary in English remains Hicks 1907, although it is of most use to those who know Greek. Those comfortable in both Greek and Latin will appreciate Bonitz's *Index Aristotelicum*, particularly if they have a high-resolution magnifying glass.

Thanks to the groundbreaking work of the Ancient Commentators on Aristotle Project initiated by Richard Sorabji, many of the ancient commentaries collected in the Prussian Academy's *Commentaria in Aristotelem Graeca* are now available in English. There is much to be learned, in particular, from Alexander of Aphrodisias, both in his own *De Anima* (Caston 2012a), the *Mantissa* (Sharples 2004), and in his commentary on the *De Sensu* (Tomey 2000), from Themistius (Todd 2014), and from the prodigiously productive John Philoponus (Eijk 2005, 2006; Charlton 2000a, 2000b, 2005a, 2005b). These works can usefully be supplemented by Thomas Aquinas's commentary on the *De Anima* (Pasnau 1999).

Each chapter ends with suggestions for further reading from more contemporary authors.

On matters linguistic I refer to Smyth's *Greek Grammar* (Smyth 1956), Denniston's *Greek Particles* (Denniston 1950), and the ninth edition of Liddell and Scott's *Greek-English Lexicon* (universally abbreviated as LSJ).

1
Introducing Aristotle and the *De Anima*

Aristotle would not have dreamed of studying anything without making every effort to understand its context, and nor should we. The most obvious context for Aristotle's *De Anima* is Aristotle himself—his life and times, on the one hand, and his personality, philosophical temperament, and the peculiarities of his prose style, on the other. We begin with these in Sections 1.1 and 1.2. Section 1.3 gives an overview of Aristotle's writings, the *corpus aristotelicum*. The book that we know as the *De Anima* is titled *Peri psuchês* in Greek, which might be translated as 'On the *Psuchê*.' But what is the *psuchê*? What is the book actually about? These questions are the focus of Section 1.4.

1.1 Aristotle's life and times

At the center of Raphael's famous fresco *The School of Athens*, Aristotle walks side by side with Plato against a stylized architectural backdrop clearly intended to convey the majesty of classical Athens. Thanks in no small part to this very image, Aristotle is indelibly linked in the popular imagination with the flourishing of Athens as a political and cultural center. The reality, however, is more complicated. Aristotle was not an Athenian, and he actually spent only about half of his life in Athens. And Aristotle's Athens of the fourth century BCE was very different from, and significantly

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less powerful than, the Athens of the fifth century "golden age" that preceded it.

The fifth century was book-ended by two major conflicts, the Persian Wars (following the invasions of Darius and Xerxes in 490 and 480 BCE), at one end, and the Peloponnesian War between Athens and Sparta at the other. Herodotus told the story of the Persian Wars, and Thucydides of the Peloponnesian War. In between we find many of the classic achievements of Greek culture—great tragedies such as Aeschylus's *Oresteia* trilogy and Sophocles's *Antigone*, the reconstruction of the Acropolis and the temple at Delphi, and the expansion of participatory democracy. Much of this activity was centered in Athens, but the political primacy of Athens suffered a serious blow when Athens surrendered to Lysander in 404 BCE, bringing an end to the Peloponnesian War.

Whereas the fifth century began with most of the Greek city-states united against a common Persian enemy (but not all—the Thebans allied themselves with the Persians), and then saw the gradual emergence of Athens and Sparta as the two dominant city-states, the fourth century began with a disunity and power vacuum that was eventually filled from outside the traditional sphere of city-states with the rise of Philip of Macedon. Confusion and disorder lasted until Philip of Macedon defeated the (temporarily united) Greeks at the battle of Chaeronea in Boeotia in 338 BCE.

If Raphael had wanted to represent the flowering of philosophy in Athens's fifth-century golden age, he really should have painted it rather differently. It would have been more accurate to have foregrounded Socrates and Sophists such as Protagoras and Gorgias, together with those presocratics who actually overlapped with Socrates (e.g., the atomists, Democritus and Leucippus, and the Eleatics, Parmenides and Zeno). Plato and Aristotle come from different, and in many ways more troubled, times. Plato founded the Academy at some point in the early 380s, some twenty years

after the end of the Peloponnesian War and roughly contemporaneous with Aristotle's birth in 384 BCE.

Aristotle himself never knew the golden age. His life was framed by the decline of the city-state and the rise of a more imperial style of leadership. And in fact, he himself was far from an Athenian. He came from the small *polis* of Stagira, located in the Chalcidian peninsula, the large peninsula jutting out to the east of the modern city of Thessaloniki. Somewhat out of the way, lying south of Macedonia and in the eastern part of Thrace, Stagira was not a conspicuous player in the history of classical Greece.

Aristotle's father, Nicomachus, was said by many of the earliest ancient sources to have been descended from the demi-god and healer Asclepius.[1] Later tradition, perhaps embellishing this report, made Nicomachus the physician to the court of King Amyntas III of Macedonia.[2] None of this is very secure, but it does seem that Aristotle grew up in a reasonably prosperous environment. His will mentions an estate in Stagira, which he presumably inherited from his father.[3] Nicomachus died relatively young, and Aristotle was brought up by someone called Proxenus, who was a citizen of Atarneus (a city in Asia Minor, where Aristotle later spent time) and sent (or accompanied) Aristotle to Athens in 367 BCE.

This is the beginning of Aristotle's intellectual biography, because he enrolled, if that is the right word, in Plato's Academy, where he remained as a pupil for around twenty years. We do not, unfortunately, have much reliable information about this period of Aristotle's life. However, it is clear that his engagement with Plato and Plato's ideas was transformative and had ramifications that

[1] This is not the Nicomachus of the *Nicomachean Ethics*, which was named for Aristotle's son.

[2] See, for example, Diogenes Laertius *Lives* 5.1. Diogenes's account is accepted by Chroust (1972, p. 367), who cites a range of other sources, perhaps all drawing on a common source. Natali 2013 is skeptical.

[3] Aristotle's will is preserved by Diogenes Laertius (*Lives* 5.11–16), and by several authors in the Arabic tradition. For more details on contents and the legal context see Chroust 1970.

lasted throughout his career. His attitude to Plato is one of great respect. Despite criticizing his doctrines vigorously at many places in his writings, he mentions Plato by name relatively infrequently. In the *De Anima*, for example, the name "Plato" only occurs once (in DA I.2), although his doctrines are frequently under discussion and all his other interlocutors (such as Anaxagoras, Democritus, and Empedocles) are explicitly referenced throughout. Not only is there no trace of personal animosity, but in a famous passage in the *Nicomachean Ethics*, Aristotle says that "the Forms have been introduced by friends of ours." Characteristically, he goes on to say: "while both are dear, piety requires us to honor truth above our friends."[4]

Aristotle's first stay in Athens came to an end in 347 BCE, after twenty years. Scholars have offered a range of explanations as to why Aristotle left Athens. Some have hypothesized that Aristotle departed because of doctrinal disagreements with Speusippus, Plato's nephew, who took over the Academy after Plato's death in 347 BCE. A more mundane explanation is that Aristotle felt snubbed at being passed over for the leadership of the Academy. Another event in 347 BCE was Philip of Macedon conquering Olynthus (a small *polis* on the opposite side of the Chalcidian peninsula from Stagira), and the rise to power of the anti-Macedonian orator Demosthenes. Some sources suggest that Aristotle was thought at the time to be pro-Macedonian, and so thought it prudent to leave.

With Aristotle's departure from Athens we enter the least documented period of Aristotle's intellectual biography. The broad outlines are reasonably well attested. From Athens Aristotle went to Atarneus, a city on the coast of Asia Minor (in what is now Turkey), opposite the island of Lesbos—and the home of his former guardian Proxenus, who by this time was probably long dead. Aristotle spent three years in Atarneus and the nearby city of Assos. From there he

[4] *Nicomachean Ethics* I.6 1096a13–18. Translated by W. D. Ross, revised by J. O. Urmson in ROT.

is believed in 345 BCE to have gone to Mytilene, on the island of Lesbos. This was probably when he met Theophrastus, who was to succeed him as head of the Lyceum, and there is a venerable tradition that during this time he and Theophrastus engaged in early biological researches. Theophrastus was certainly a native of Lesbos, but beyond that there appears to be little that is not disputed.

After two years in Mytilene Aristotle went to Macedonia in 343 BCE, where he spent some years (perhaps three) as tutor to King Philip's son Alexander, the future Alexander the Great.

According to Plutarch, Aristotle not only taught Alexander his entire philosophy, including the *Metaphysics*, but also prepared for him a special edition of the *Iliad*, as a "viaticum of the military art," and instilled in him a love of healing. This charming account is impossible to verify, unfortunately. Most authorities, ancient and modern, agree with Plutarch that Aristotle's relationship with Alexander cooled somewhat after he (Alexander) acceded to the throne in 335/4 BCE (by which time he had, most probably, long since stopped receiving formal instruction from Aristotle).

In any event, Aristotle seems to have spent eight years in Macedonia, at the end of which he returned to Athens, where he founded his own school, the Lyceum. As a *metic*, Aristotle was barred from owning real estate in Athens, and so it is sometimes suggested that the Lyceum was really only a loosely connected informal group of friends, rather than an organized school with a set curriculum and fixed location. At the other extreme, others have suggested that Aristotle's Lyceum was really a precursor of the modern (i.e., nineteenth-century German) university, with courses, seminars, lecture halls, a natural history museum, distinctions of seniority among professors, and so on.[5]

[5] The most distinguished proponent of this view was the nineteenth-century German scholar Ulrich von Wilamowitz-Moellendorf. Lynch 1972 offers a more modern version, taking issue with Wilamowitz's claim that the Lyceum presented itself publicly as a religious association.

Information is thin on Aristotle's second stay in Athens. Scholars are divided on the authenticity of an inscription claimed to have been commissioned by the Athenians, thanking Aristotle for his services to the city, particularly by intervening with King Philip.[6] It does appear, though, that Aristotle was friendly with the Macedonian regent Antipater, who is mentioned twice in his will as the principal executor. There is no consensus among scholars as to the extent and closeness of Aristotle's relationship with Macedonia during either of his stays in Athens, but most agree that there is some connection between Aristotle's departure from Athens in 323 BCE and the fact that the anti-Macedonian party in Athens was strengthened by the death of Alexander that same year. It also appears that Aristotle was about to be charged with impiety—either on the grounds of having written a paean to Hermias of Atarneus, who was a mere mortal) or on some pretext ultimately connected to his perceived pro-Macedonian tendencies.

In any case, Aristotle went from Athens to Chalcis, on the island of Euboea (not to be confused with the Chalcidian peninsula, where Stagira is located—on the same side of Greece as Euboea, but much farther north). He died there a year later, in 322 BCE.

1.2 Personality, temperament, and prose style

We are fortunate to possess Aristotle's will, which is a surprisingly human document. As one would expect from the discussion of the virtues in the *Nicomachean Ethics*, Aristotle shows himself to have an appropriate interest in worldly matters. He is plainly very prosperous and aware of his station and standing. He comes across as thoughtful and considerate in the provisions he makes for his family and slaves. He enjoins his executors to bury him together with the remains of his first wife Pythia and to help his companion

[6] See Natali *op. cit.* p. 59 for references to the debate.

Herpyllis seek a new husband should she so wish. He also instructs them to free his slaves, either immediately or, in the case of the younger ones, when they reach an appropriate age.

Obviously Aristotle was more than comfortable with the practice of slavery, and this is something that readers will need to take into account as they evaluate his ethical and political views. He was hardly out of step with his times, but still Aristotle did more than simply accept the practice. He went out of his way, in the first book of the *Politics*, to propose a theoretical justification for the practice, the so-called theory of natural slavery. It is hard to put a positive spin on this, and it would be unwise to try.[7]

Also representative of his time were his views on women, which have generally not stood the test of time well. He certainly thought that women were inferior to men, partly but not exclusively because of what now seem rather peculiar biological theories. On that basis he has frequently been accused of misogyny. Recent scholarship, however, has found room for a richer dialog between Aristotle's writings and modern feminism. Some have noted, for example, how Aristotle's emphasis in his ethical writings on the importance of personal relations and situational factors resonates with similar concerns among feminist theorists.[8]

Aspects of Aristotle's personality do seem to be revealed in his writings. He was very fair-minded as an interlocutor, only very rarely hostile or dismissive. His general instinct as an investigator was to find glimmerings of the truth wherever he could, seeing his job as one of preserving and bringing into harmony as many of the common views or appearances (*phainomena*) and reputable opinions (*endoxa*) as possible. He was not given to conceptual swashbuckling, and his primary rhetorical tools are fine distinctions and careful analysis. His writings manifest a strong

[7] The theory itself is examined in Smith 1983.
[8] See, for example, the essays in Freeland 1998.

temperamental preference for precision over stylistic flourish, and subtlety of thought over grand theoretical gestures.

This is a good moment to mention Aristotle's prose style, which is a source of exasperation to many, but of delight to some. The surviving works (almost none of which were actually intended for publication, as opposed to serving as lecture notes and for consumption by students and colleagues) are written in a Greek that is all Aristotle's own. Some of his predecessors were noted for their obscurity. Parmenides and Empedocles wrote in Homeric hexameters full of archaic constructions and ambiguous syntax. The fragments of Heraclitus are replete with wordplay and multiple layers of meaning. None of them can be said, though, to have created a philosophical language in the way that Aristotle did.

This is partly a matter of vocabulary. Aristotle's originality forced him essentially to invent an entirely new set of concepts and methodological tools. His writings contain a number of neologisms, as he developed his logical and scientific theories. To take two examples that will loom large in *De Anima*, words such as *entelecheia* (fulfilment, or actuality) and *energeia* (activity), which express related concepts, seem to have made their first appearance in Greek in Aristotle. Also prominent in Aristotle's writing are ordinary Greek words that have been co-opted and combined, often violently, to try to articulate new modes of thinking. A very good example is the phrase standardly translated as essence (an English word itself derived from the late Latin word *essentia*, which gained philosophical currency in translations of Aristotle). In (transliterated) Greek this is *to ti ên einai*, for which the literal translation is: *the what it was to be*.[9] This is likely to have struck Aristotle's contemporaries as a barbarism of the first order.

For better or for worse, Aristotle was probably the inventor of philosophical jargon. But vocabulary is only a piece of the picture.

[9] Or quite possibly: the what it is to be, reading the imperfect as present (Smyth 1956 §1901–1902 and LSJ *esti* F.1).

A defining feature of Aristotle's philosophical temperament is a passion for precision. This brought with it a need to make conceptual distinctions that were not linguistically available to him, but also to cut out some of the baggage that language brings. This is one source of his famously elliptical and terse syntax. He has little interest in connotation or allusion and so strips his sentences down to the bare essentials for articulating the thought he wants to communicate. Aristotle can write sentences as long and complicated as Plato's, but few of them would be proposed as touchstones of classical Greek prose. It is telling that the index to J. D. Denniston's *The Greek Particles*, which despite its name is in many ways a stylistic survey of classical Greek literature and philosophy, contains barely two columns of references to Aristotle (as opposed to thirty-one columns of references to Plato).

Moreover, and this is one of the sources of exasperation, Aristotle is always ready to recognize the need for qualification and refinement. His standard response to an either-or question is "one the one hand yes, on the other hand no," and rare is the concept in Aristotle that is not, in his famous phrase, *pollakôs legetai* (said in many ways). As a result, it is easy to get lost in sentences where the original thought is buried under successive layers of qualification and refinement.

Many readers will be encountering Aristotle in translation. In an attempt faithfully to preserve as much of the original as possible, Montgomery Furth translated the central books of the *Metaphysics* into an idiom that he called Eek—neither English nor Greek. He has not been followed in this by any other translator, as far as I am aware.[10] Translations of Aristotle tend, for very good reasons, to choose readability over literalness. It is important for readers of

[10] Jonathan Barnes went some way down this road in his first translation of the *Posterior Analytics*. He castigates his earlier translation in the preface to the second edition: "Professing a stern fidelity to Aristotle's Greek, it betrayed a profound misconception of that delicate virtue. It was written in a sort of dog English: always inelegant and sometimes barbarous, it appeared here as comic or disgusting and there as merely incomprehensible" (Barnes 1993, vi). Thanks to Eric Brown for the pointer.

Aristotle in translation, though, to be aware that Aristotle's Greek is often tauter and more condensed (and usually somewhat more ungainly) than the English version in front of them.

Here is an example from Book II of the *De Anima*, illustrating how this can lead to challenges of interpretation. The Greek text is accompanied by a translation into my idiolect of Eek.

λέγομεν δὴ γένος ἕν τι τῶν ὄντων τὴν οὐσίαν, ταύτης δὲ τὸ μέν, ὡς ὕλην, ὃ καθ' αὑτὸ οὐκ ἔστι τόδε τι, ἕτερον δὲ μορφὴν καὶ εἶδος, καθ' ἣν ἤδη λέγεται τόδε τι, καὶ τρίτον τὸ ἐκ τούτων.[11]	We say indeed that the what-is is one genus of the things that are, of it on the one hand as matter, that which in itself is not this something, and on the other as something else, shape and form, according to which already it is called this something, and third the [thing] out of these.

Here is the translation by J. A. Smith in the *Revised Oxford Translation*:

> We say that substance is one kind of what is, and that in several senses: in the sense of matter or that which in itself is not a this, and in the sense of form or essence, which is precisely that in virtue of which a thing is called a this, and thirdly in the sense of that which is compounded of both.

Consider Aristotle's last three words: *to ek toutôn*. A literal translation (in Eek!) would be "the [thing] out of these." Smith expands to "that which is compounded of both." This adds something that is neither in the original nor directly implied by what is written. To present Aristotle as discussing a *compound* of matter and form is to move from translation to interpretation. The word normally translated as 'compound' has a technical meaning for Aristotle, and when understand in *that* technical sense, no substance (and

[11] DA II.1 412a6–9.

certainly not either the *psuchê* nor the human being) could possibly be a compound.[12]

1.3 The *corpus aristotelicum*

One reason why scholars have thought of Aristotle's Lyceum as a proto-university is that it is not hard to discern within the *corpus aristotelicum* the basic organizational structure of the heart of a modern university. We find works dedicated to topics in physics, astronomy, meteorology, and biology, among the natural sciences; to politics, comparative surveys of constitutions, and investigations of sensory physiology, among the social sciences; and to rhetoric and poetics, among the humanities. This list does not include any of the works that might (very arbitrarily, from Aristotle's perspective) be thought of as primarily philosophical—the *Metaphysics*, the ethical writings (the *Nicomachean Ethics* and the *Eudemian Ethics*), together with his writings on logic and scientific method.

The scope of Aristotle's investigations is impressive, but even more striking is how systematic it is. Aristotle is a highly systematic thinker at the level of the individual *epistêmê* (his term for the individual areas of investigation, often translated 'science'). Within each *epistêmê* Aristotle does not simply offer a catalog of facts or findings, in the manner of earlier natural philosophers, such as the Milesians Thales, Anaximander, and Anaximenes, who engaged in what they called *historiê*, perhaps best translated as 'inquiry' (and the source of the modern English word 'history'). Aristotle systematizes and regiments what he finds and records.

Even more importantly, Aristotle is self-conscious about the principles governing this organization and regimentation. In in Book I of the *Posterior Analytics* he is explicit that an ideal *epistêmê* should take the form of an axiomatized theory, showing how the

[12] For more on this, see note 1 of Chapter 5 below.

scientist's discoveries follow from a small set of definitions and basic truths. The idea is not that the process of discovery is itself deductive. It sometimes is, but more usually is not. What is always deductive, though, is the ideal *presentation* of knowledge.

Moreover, in the majority of what are often called his sublunary (i.e., terrestrial) investigations, Aristotle works with a basic explanatory framework organized around a small set of basic and interrelated concepts. This set includes the interrelated concepts of matter (*hulê*), form (*eidos* or *morphê*), function (*ergon*), essence (*to ti ên einai* and various other neologisms), and substance (*ousia*). We will look at this explanatory framework in some detail in Chapter 4. For the moment, the key point is that this introduces another level of organization and integration across the *corpus aristotelicum*. Aristotle is not just striving for an axiomatization of knowledge, but he is doing so with a well-defined and clearly articulated toolkit. And the tools in the toolkit are themselves the subject of sustained investigation, primarily in the *Metaphysics*.

This brings us to the second respect in which Aristotle's thinking is systematic. He sees the *epistêmai* (plural of *epistêmê*) as organized hierarchically, albeit a somewhat loose hierarchy. One dimension of this hierarchy is sketched out in Book I (Alpha) of the *Metaphysics*. In Alpha chapter 1 Aristotle endorses what he reports as the widely held idea that wisdom (*sophia*) is knowledge of what he calls "first causes and the principles of things." So here is the first part of the hierarchy:

> the man of experience is thought to be wiser than the possessors of any perception whatever, the artist wiser than the men of experience, the master-worker than the mechanic, and the theoretical kinds of knowledge to be more of the nature of wisdom than the productive.[13]

[13] *Metaphysics* 981b30–982a1. Trans. Ross in ROT.

Aristotle distinguishes the productive *epistêmai* from the theoretical ones at various places. A theoretical science seeks knowledge for its own sake, while a productive science seeks to create some object, effect, or state. The theoretical sciences include natural sciences such as physics and astronomy, as well as metaphysics and logic. Rhetoric, medicine, and agriculture all count as productive. Aristotle is clear that the theoretical sciences are superior, and hence to be valued more highly, than the productive ones.

There is a third category of *epistêmê*, besides the productive sciences and the theoretical sciences. This category includes what Aristotle calls the practical sciences. These have to do with conduct, both at the level of the individual and at the level of society. Ethics is the practical science of the individual, represented in Aristotle's writings by the *Eudemian Ethics* and the *Nicomachean Ethics*.[14] Politics is the practical science of society, and the subject, of course, of the *Politics*. Aristotle is said to have written on economics, although the work of that name in the *corpus* is not believed to be authentic.[15] It seems likely that he would also have viewed economics as a practical science, concerned with conduct at the level of the household (the word *oikonomikê* is derived from *oikos*, house, and *nomos*, law and is probably better translated 'housecraft').

Figure 1.1 attempts to depict Aristotle's conception of the overall structure of human knowledge.[16] The obvious question to ask is: Where does the *De Anima* fit into the diagram? Should we put it, for example, in the branch that contains metaphysics and the study of substance? That would be to situate it as a more

[14] The *corpus aristotelicum* also contains the *Magna Moralia*, which is widely, but not universally, held to have been written by a later hand. For an analysis of the *Magna Moralia* as an early work of Aristotle's see Cooper 1973.

[15] For the reference to Aristotle's writing on the economy, see Fragment 182 in Rose's 1888 edition of the *Fragmenta*. The translation is by J. Barnes and G. Lawrence in ROT at p. 2434.

[16] I have adapted a diagram in Barnes 1981. My major divergences from Barnes are, first, in making the productive sciences subordinate to the practical sciences, and, second, in dividing metaphysics into substance, astronomy, theology, and logic (as opposed to dividing metaphysics into logic and theology).

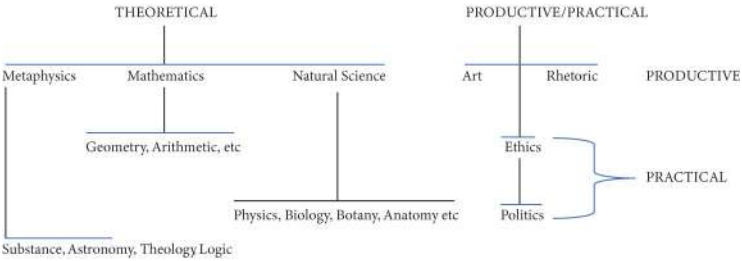

Figure 1.1 The organization of human knowledge according to Aristotle (adapted from Barnes 1981).

straightforwardly philosophical work. Or should we put in the natural science branch, taking it to be a general scientific investigation of the *psuchê*?

This is a very complex question, one that takes us to the heart of the *De Anima*, and that will occupy us throughout this book, but we will make a start on it in the next section, which explores the subject matter of the *De Anima*.

1.4 What is the *psuchê*?

The book we know as *De Anima* is entitled *Peri Psuchês* (*Concerning Psuchê*), reflecting the decision of ancient and medieval editors and commentators to translate *psuchê* into Latin as *anima*. The Latin word 'anima' is itself standardly translated 'soul,' which seems appropriate, given how much the modern conception of soul (in the Western tradition) reflects the legacy of a Latinized Christianity. And so, following the chain of translation back, we get the almost universal translation of *psuchê* as 'soul.' This seems to place *De Anima* right at the beginning of a long and familiar intellectual tradition, which has itself co-opted Aristotle as a guiding star. However, we need to be very careful about assuming that *De Anima* is an investigation of what we would think of as soul.

A good way to appreciate this is to look at how the word *psuchê* was used in ancient Greece. One recurrent theme in appearances of the word in poetry, drama, and presocratic philosophy is that *psuchê* often functions more or less as a synomym of 'life.' Here are the famous opening lines of Homer's *Odyssey* in Robert Fagle's translation:

> Sing to me of the man, Muse, the man of twists and turns
> Driven time and again off course, once he had plundered
> The hallowed heights of Troy.
> Many cities of men he saw and learned their minds,
> Many pains he suffered, heartsick on the open sea,
> fighting to save his **life** (*psuchê*) and bring his comrades home.

While it is true that Homer uses *psuchê* to describe that which leaves the body at death, and when Odysseus travels to the underworld in *Odyssey* it is the *psuchai* of the dead that he encounters, there are important differences between the Homeric *psuchê* and the modern soul. Whereas the word 'soul' usually denotes something like the locus of consciousness, thought, and emotions, *psuchê* in Homer is not connected to any of these things. Instead, in the memorable phrase of the classicist E. R. Dodds, "the only recorded function of the *psuchê* in relation to the living man is to leave him."[17] When Homer wants to talk about what is responsible for perception, thought, and emotion he tends to use words such as *thumos* (spirit), *êtor* (heart, seat of the passions), *kêr* (heart), *phrên/phrenes* (heart, midriff), and *noos* (understanding, insight). These, not the *psuchê*, are responsible for psychological life, according to Homer.

The use of *psuchê* to mean life persists much closer to Aristotle's own time. Here is an example from the fifth-century tragedian

[17] Dodds 1951, p. 16. For a book-length development of Homer on *psuchê* and related concepts see Clark 1999, which argues that, for Homer, the *psuchê* was the final breath of the dying man. There is an overview of his position at pp. 53–60 and related discussion in ch. 1 of Long 2017.

Euripides. In his *Alcestis*, the eponymous heroine offers to die in place of her husband, Admetus, so that he could achieve the immortality promised by Apollo. What she gives up is her *psuchê*. Here she is on her deathbed:

> Admetus, since you can see how things are with me,
> I want to tell you what I wish before I die.
> Putting you first, and, at the price of my own **life** (*psuchê*),
> Having allowed you to look upon this light,
> I am dying, for you, although I need not have,
> But could instead have had whichever Thessalian I pleased,
> And dwelt in a wealthy house with royal power.[18]

In fact, in a comprehensive survey of conceptions of *psuchê* before Plato, David Claus remarks that "most occurrences of *psuchê* in late fifth-century prose denote either 'life' or 'courage.'"[19]

Of course, for thinking about how Aristotle was thinking of the *psuchê* we need also to consider more explicitly philosophical uses of the term. There is certainly no consistency among the presocratic philosophers, particularly if we restrict ourselves to explicit quotations (the so-called B-fragments) and set aside later *testimonia* (the A-fragments, which include Aristotle's own discussions in *De Anima* Book I).

In fact, the word *psuchê* is not much used by the presocratics in the B-fragments. It does not occur at all in what remains of Parmenides's long poem. We do find it in Democritus, but only in the so-called ethical fragments, many of which are fairly banal.[20] It is significant that Empedocles, as the only presocratic philosopher who is on record proposing a doctrine of metempsychosis

[18] Euripides, *Alcestis*, lines 280–287. My own translation.
[19] Claus 1981, p. 141.
[20] See, for example, B36, which Graham translates as: "It is fitting for men to value the soul (*psuchê*) more than the body. For perfection of soul corrects badness of the housing [body], but strength of the housing without reasoning does nothing to improve the soul (*psuchê*)" (Graham 2010, vol. 1, p. 637). B37 is along similar lines: "He who chooses

(typically thought of as involving the transmigration of souls that reincarnate into different bodies), does not appear to have used the word *psuchê* for what survives death and migrates into a new body. In Fragment B115, where Empedocles seems to be presenting a doctrine of metempsychosis, he writes, as translated by Inwood:

> There is an oracle of necessity, an ancient decree of the gods,
> That when someone by his sins stains his dear limbs with blood
> —the daimons who have won long-lasting life—
> He wanders for thrice ten thousand years from the blessed ones.
> Now I too go this route, an exile from the gods and a wanderer.[21]

This fragment is somewhat baffling, but it is at least clear that the word *psuchê* does not appear in it. What is banished for 30,000 years is the *daimon*, not the *psuchê*.[22] In fact, the word seems to appear only once in the recognized fragments of Empedocles, and there it means 'life.'[23]

The only major presocratic philosopher who had much to say about the *psuchê* is Heraclitus. Heraclitus is an evocative, daring, and suggestive thinker. It is clear that he goes beyond thinking of the *psuchê* simply in terms of life and breath. He thinks that the *psuchê* is in some sense the psychological core of the living person, with hidden depths and a structure that mirrors and reflects the

goods of soul chooses the more divine: He who chooses the goods of the housing chooses the human."

[21] Inwood 2001, p. 86.

[22] It is true that Plutarch, when he quotes this passage in his *De Exilio*, frames it as a comment on the reincarnation of the *psuchê* and on the relation between body and *psuchê*, but one should probably be wary of putting too much weight on this. Plutarch had his own agenda and was writing five centuries or so later. The *index verborum* in Wright's edition of Empedocles does not contain the word *psuchê*. She discusses Empedocles's theory of the *daimon* at Wright 1981 pp. 69–76.

[23] In the short fragment B138, actually quoted by Aristotle in the *Poetics* at ch. 21, where he refers to "having drawn off life (*psuchên*) with the bronze." Thanks to Jason Carter here.

structure of the cosmos. All of these are apparent in fragments such as the following:[24]

> B45
> Going onwards one would not find the limits of the *psuchê*, even if one traveled on every road: so deep is its measure (*logos*).

> B115
> The *psuchê* has a measure (*logos*) increasing itself.

> B107
> Poor witnesses for men are eyes and ears, if they have barbarian *psuchai*.

But it is very hard to get from these gnomic utterances to a positive account of the *psuchê*. One sign of this is the quite extraordinary variation in scholarly interpretations of Heraclitus on the *psuchê*. Scholars are divided on a number of very basic questions. There is no agreement, for example, on whether Heraclitus believed in the survival of the *psuchê* after death.[25] And so it is not surprising that at least one distinguished scholar has wondered whether Heraclitus had a determinate theory of the *psuchê* at all.[26]

For completeness, there is mention of the *psuchê* in the Pythagorean Philolaus, who wrote in fragment B13, in Graham's translation:

> The head [is the seat] of thought, heart of *psuchê* and sensation, navel of rooting and first growth, and genitals of sowing seed and

[24] The translations are my own, with an emphasis on literalness.

[25] Nussbaum, for example, is convinced that Heraclitus, while according a central role to the *psuchê* in the psychological organization of human beings, believes that both *psuchê* and the human body are destroyed at death. See her 1972a and 1972b, particularly the second. For the opposing view that Heraclitus held the *psuchê* of at least some people to survive after death, see Kahn 1979 and McKirahan 2010.

[26] Schofield 1991a.

> begetting. The brain <contains> the source of man, the heart that of animal, the navel that of plant, the genitals the source of all of them. For all things sprout and grow from seed.[27]

I have left *psuchê* untranslated. Graham proposes 'life,' adding 'soul' in parentheses. There is not much in the surviving fragments of Philolaus to help clarify. But it is worth mentioning that the idea that the *psuchê* is an attunement (*harmonia*), criticized by Aristotle in *De Anima* (see Chapter 3 below), was attributed to Philolaus,[28] making it even murkier to determine what he might have meant by *psuchê*, because it is hard to see how an attunement of the body can be located in the heart.

It is not until the middle-period dialogs of Plato that we encounter a conception of *psuchê* with clear and recognizable affinities to the modern conception of the soul (unsurprisingly, given the long shadow that Platonic conceptions of the *psuchê* have cast). In the *Meno*, in connection with the doctrine that knowledge is recollection (*anamnesis*), Socrates introduces the immortality of the *psuchê*, attributing it to the lyric poet Pindar, as well as to various priests and priestesses.[29] Socrates has relatively little to say in the *Meno* about how exactly the *psuchê* should be understood. This is remedied first in the *Phaedo* and then in more detail in the *Republic*.

In the *Phaedo*, Socrates presents an account of the *psuchê* dramatically different from any proposed by his predecessors. The

[27] Graham 2010, vol. 1, p. 503.

[28] E.g., by Macrobius in *testimonium* A23, for which see Graham 2010, vol. 1, pp. 504–505.

[29] *Meno*, 81b. Socrates quotes five lines of Pindar that describe how the *psuchai* of those who have made suitable atonement (no further details supplied) are reincarnated after nine years as holy kings and warriors. This fragment does not come from any of the surviving Victory Odes, but is close in spirit to the Second Olympian Ode, which is where Pindar develops ideas of metempsychosis much more fully, with a vivid description of life in the island of the blessed. There is a lengthy philological discussion of the fragment quoted in the *Meno* (Fr.133) in Bluck's edition of the *Meno* (Bluck 1961, pp. 277–286).

account is explicitly linked to a conception of the nature of philosophy and to a defense of immortality. One of the novelties of Socrates's proposal in the *Phaedo* is its strict dualism. The true function of the *psuchê* is reasoning and the contemplation of the Forms. Only in virtue of being trapped in the confines of the body is the *psuchê* compelled to learn through the senses and to be subject to non-intellectual desires. The mission of true philosophers is to emancipate themselves from sensory knowledge. By doing so they approach the condition that the *psuchê* will be in after death. Here is a magnificent expression of the view, in what may be one of the longest sentences ever written about the *psuchê*, coming in at around 170 words in Greek:

> For lovers of learning know, he said, that, taking over their *psuchê* absolutely bound and glued to the body, compelled to investigate through it, just as through the bars of a cage, the things that are, but not as they are in themselves, but in fact rolling along in complete ignorance, Philosophy, seeing clearly the clever trick of the cage, which is that it is through desire that the person who is bound is himself most particularly an accomplice in his own capture—so then, in fact, I say that lovers of learning know well that Philosophy, taking over a *psuchê* in this sort of state, gently encourages it and tries to set it free, revealing it to be full of deceit stemming from perception through the eyes, the ears, and other senses, persuading it, on the one hand, to withdraw from them, making use of them as little as possible, in order that the *psuchê* might with this encouragement gather and collect itself into itself, and, on the other, persuading it to trust in nothing other than itself by itself, as well as whatever, among the things that are, it itself and by itself grasps by thought as being in itself and by itself, and not to take to be real anything that it might encounter through other means and in other, different things, and that what is seen and what is perceived is of

> this latter sort, while what it itself sees is perceptible to the mind and invisible.[30]

This conception of the immortal *psuchê* confronts the same sort of problems as arise, for example, for Christian conceptions of the immortal soul. So one might ask, for example, how the individuality of the person is reflected in a hyper-rational *psuchê* contemplating the eternal and invisible forms, just as one might ask what the immortal Christian soul actually amounts to before it is reunited with the body on the day of judgment.[31]

The theory of the *Republic* is more sophisticated than that of the *Phaedo*, because Plato is thinking much harder about how to integrate the non-reasoning parts of the *psuchê*, which in the *Phaedo* were simply attributed to the body and not explained in any detail. In contrast to the unitary *psuchê* of the *Phaedo*, Plato develops (and argues for) a conception of the *psuchê* as divided into three parts (the rational, the spirited, and the desiring), mirroring the tripartite structure of the ideal city. His overarching goal, unlike in the *Phaedo*, is an ethical one, broadly speaking—to explain, in response to the challenges posed by Thrasymachus in Book I and by Glaucon and Adeimantus in Book II, how being just can be intrinsically beneficial to the just person. It turns out that justice in the *psuchê* is structurally parallel to justice in the city. In each case, justice consists in the holding of appropriate relations of mastery between the three elements.

Plato grapples with the problem of how the desiring and spirited parts of the *psuchê* can be more than the seat of blind impulses, if

[30] *Phaedo* 82d9–83b4. My own translation, aiming to preserve the syntax and sentence structure of the original as much as possible. I have translated Plato's distinctive phrase *auto kath' hauto*, which combined the intensifier *autos* (self) with reflexive pronoun *heautos* (itself) as 'itself by itself', rather than the more common 'alone by itself.'

[31] On this aspect of *Phaedo* see Bostock 1986, ch. 2.

reasoning is the purview of a completely separate part. His solution is to attribute certain basic forms of cognitive functioning to the desiring and spirited parts, including a rich conception of perception and memory.[32] The end result, when we consider the theory of the *Republic* in the broader context of pre-Aristotelian conceptions of *psuchê*, is to broaden the scope of the *psuchê*. In contrast to the austere conception of the *Phaedo*, Plato recognizes the psychological reality and centrality of mental conflict, and so extends the notion to include non-philosophical human beings.

Here are some key points from this very brief survey to carry into our investigation of *De Anima*.

- A basic, perhaps *the* basic, conception of *psuchê* was as what distinguishes the living from the non-living. To possess a *psuchê* is, at a minimum, to be alive. The word Greek word *empsuchos* does not mean 'ensouled,' but rather 'living' or 'animate.'
- The word *psuchê* was just one of a complex of psychological words used to describe human cognitive and affective functioning.
- Some authors, such as Empedocles, who seemed to be discussing something closer to the modern conception of soul, typically used *daimôn* or other words, using *psuchê* in a sense much closer to life.
- The doctrine of the immortal *psuchê* dedicated to pure reason developed by Socrates in the *Phaedo* seems to have been something of an outlier, when viewed in the broader philosophical and cultural context.
- When Plato introduces his tri-partite model in Book IV of the *Republic*, he reincorporates into the *psuchê* somatic and psychosomatic elements that had been temporarily banished in the *Phaedo*.

[32] This follows the strong reading of partition defended in part 1 of Lorenz 2006, on which Plato's language of parts is to be read literally.

It is important to recognize just how wide-ranging the notion of *psuchê* was in Aristotle's intellectual context. It is really only in the writings of Plato (and even there probably only in the *Phaedo*) that we have anything that looks like a modern conception of the soul. The presocratic philosophers seem to have used *psuchê* in a much broader sense, in line with the poets and the dramatists, to incorporate many of the activities and functions that support life. This is particularly important, given Aristotle's sensitivity both to the pretheoretical *phainomena* (which include how words are used) and to the *endoxa* (reputable theoretical conceptions of whatever he is discussing). For this reason, I will continue in the following to leave *psuchê* untranslated.

A final, related point. For Socrates in the *Phaedo* the investigation of the *psuchê* falls squarely in the province of the philosopher. Aristotle's conception of what it is to investigate the *psuchê* is much broader. To the extent that it involves understanding the functioning of different aspects of cognitive and affective life, it will incorporate elements of what we would now call psychology. To the extent that it involves understanding the mechanisms corresponding to those functions, it will incorporate elements of physiology. To the extent that it involves understanding what makes it the case that non-human animals, and even plants, are capable of life, it will incorporate elements of zoology, botany, and biology. For that reason, therefore, Aristotle explores different aspects of the *psuchê* in a range of works that complement the *De Anima*. These include:

- the *Eudemus*, an early dialog, now surviving only in fragments, but which appears to have been largely devoted to the *psuchê*
- the *Parva Naturalia* (*Shorter Treatises on Nature*), which is a collection of seven short works on topics such as the senses, divination in dreams, and sleep
- the *De Partibus Animalium* (*On the Parts of Animals*), which is a study of anatomy and physiology

- the *De Motu Animalium* (*On the Movement of Animals*), in which Aristotle discusses a range of topics to do with animal locomotion, including how thought and desire give rise to action

It would be anachronistic, of course, to call *De Anima* an interdisciplinary work, since there were in Aristotle's day no disciplinary boundaries to cross. But still, and this is a theme we will be returning to many times, there are very few branches of the theoretical sciences that Aristotle does not bring to bear in one form or other to the study of the *psuchê* in *De Anima*.

Further reading

Natali 2010 is an authoritative review of ancient and modern sources on Aristotle's life and school. For a shorter overview see Shields 2012. Diogenes Laertius's life of Aristotle in his *Lives of the Eminent Philosophers* is not very reliable, but certainly worth reading. Jaeger 1948 is a famous and influential intellectual biography of Aristotle. For background information on the history of Greece in the fifth and fourth centuries BCE, Osborne 2000 and Martin 2000 are both helpful. There is an almost endless series of books on how the Greeks understood themselves. Cartledge 2002 is a good place to start.

The literature on Aristotle's conception of scientific knowledge and the division of the sciences is enormous, and much of it very specialized. For a general discussion of Aristotle's understanding of *epistêmê*, see Burnyeat 1984 (critically discussed in Lesher 2001). Aristotle's "architectonic" of the sciences is discussed in Johnson 2015. The best short introductions to Aristotle's work are Ackrill 1981, Barnes 1981, and Shields 2014 (somewhat less short).

Most of what has been written on the concept of *psuchê* prior to Socrates is fairly inaccessible to non-classicists. Long 2017 is a distinguished exception. Those with a background in classics should start with the detailed discussion of Homer's language of mind and self in Clark 1999, and then use the comprehensive survey in Claus 1981 to orient themselves in presocratics and literary uses. On Plato's conception of *psuchê* in the *Republic* Lorenz 2006 is a good place to start. For the *Phaedo* see Bostock 1986.

2

Aristotle and his predecessors: The question of motion

Focus Text *De Anima* Book I, with particular emphasis on DA I.2 and DA I.3

Many readers will find the first book of *De Anima* rather puzzling when they first encounter it. Aristotle discusses a range of views that seem, on their face, quite bizarre. So, for example, he engages with the theory that the *psuchê* is a self-moving number, and with a comparison of the *psuchê* to motes of dust appearing in rays of sunlight coming through a window. The discussion is dense and disjointed, and appears to bear little relation to the argumentation in Books II and III. It is not entirely surprising that the first translation of *De Anima* in the Clarendon Aristotle Series omitted large portions of Book I.

Nonetheless, readers should persevere. For one thing, DA I is a fascinating window into how Aristotle viewed his predecessors and contemporaries—and perhaps even into those thinkers themselves.[1] More importantly, woven into the discussion of the presocratics and some of his contemporaries are several very important arguments that structure and constrain the positive accounts that Aristotle puts forward in DA II and DA III. These

[1] The question of how accurate Aristotle was in reporting the views of the presocratics has provoked extensive discussion since the highly negative answer offered in Cherniss's influential *Aristotle's Criticism of his Predecessors* (Cherniss 1935). See, for example, Guthrie 1957, Stevenson 1974. It is important to remember, also, that Aristotle is not confining himself to the philosophers whom we call the presocratics. Plato is an interlocutor in DA I, of course, and Xenocrates, Speusippus's successor as head of the Academy, has traditionally been credited with the view of the *psuchê* as a self-moving number.

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include intriguing discussions of motion and the *psuchê*, the nature of perception, and the relation between the *psuchê* and the body.

This chapter begins with a general discussion of Aristotle's method in DA I, explaining in Section 2.1 how and why he engages with earlier thinkers. In Section 2.2 we will look at what the thinkers he discusses took to be the defining features of the *psuchê*. The final section, Section 2.3, then focuses on his subtle and important discussion of motion and the *psuchê*, leaving the other central themes in DA I for Chapter 3.

2.1 What is Aristotle doing in DA I?

The *De Anima* is not unusual in beginning with a historical overview. This is how Aristotle begins both the *Physics* and the *Metaphysics*, which each discuss more or less the same cast of characters as we encounter in DA I. In all three books Aristotle is applying the general approach to scientific inquiry developed in his more explicitly methodological writings, particularly the *Posterior Analytics*.

In DA I, as in *Metaphysics* A and *Physics* I, Aristotle begins his inquiry by setting down what he takes as the starting-points for *dialectical* reasoning and investigation. 'Dialectic' is being understood here in a broader sense than in some of the logical writings, where the art of dialectic is discussed as a form of stylized debate and argumentative exchange. In its most general sense, a dialectical argument is an argument that is not demonstrative, because it does not start from premises that are certain—an argument with a special kind of premise, rather than a special kind of argument. As he puts it in the *Prior Analytics*, "if we look for dialectical deductions, we must start from plausible propositions."[2] But what are these?

Aristotle held that scientific knowledge (*epistêmê*) would ideally be presented in the form of demonstrative deductions derived from

[2] *Prior Analytics* I.30 46a9–10, trans. A. J. Jenkinson in ROT.

first principles that are true, known to be true, and also explanatorily prior to the conclusions derived from them. But before we can present scientific knowledge demonstratively we need to have identified and formulated the first principles. And for that we need a different type of premise, as Aristotle explains in a famous and much-discussed passage a little further on in the same chapter from the *Prior Analytics*:

> But in each science the principles which are peculiar are the most numerous. Consequently, it is the business of experience (*empeiria*) to give the principles which belong to each subject. I mean for example that astronomical experience supplies the principles of astronomical science; for once the phenomena (*phainomena*) were adequately apprehended, the demonstrations of astronomy were discovered.[3]

The key word here is phenomena (*ta phainomena*), formed in Greek from the present participle of the verb for appearing.

The phenomena, the things that appear, are the starting points of dialectical investigation. They can take many different forms. In the case of astronomy the phenomena are astronomical observations. But, just as different sciences have different first principles, so too do they often have different *phainomena*. At the beginning of Book I of the *Topics*, Aristotle explains that dialectical arguments start from "reputable opinions." The Greek word translated as "reputable" is *endoxos*, and Aristotle regularly makes it into a plural noun, *ta endoxa* (the reputable opinions). A little further on, he clarifies which opinions are going to count as *endoxa*: "Those opinions are reputable which are accepted by everyone or by the majority or by the wise—i.e. by all, or by the majority, or by the most notable and reputable of them."[4] The study of the *psuchê*

[3] *Prior Analytics* I.30 46a17–22, trans. A. J. Jenkinson in ROT.
[4] *Topics* I.1 100b21–24, trans. W. A. Pickard-Cambridge in ROT.

begins with *phainomena* in the sense of *endoxa*.[5] In the *De Anima* Aristotle is concerned primarily with the third type of *endoxa*—with the opinions of the wise. In other writings, most famously the discussion of weakness of will (*akrasia*) in the *Nicomachean Ethics*, the *endoxa* are closer to being universally held opinions (e.g., the opinion that weakness of will is actually a genuine psychological phenomenon).

In fact, Aristotle sometimes thinks of the *endoxa* not just as starting-points for inquiry, but also as in an important sense defining how it should end. Consider this passage from the beginning of the discussion of weakness of will in *Nicomachean Ethics* VII:

> We must, as in all other cases, set the phenomena before us, and after first discussing the difficulties, go on to prove, if possible, the truth of all the reputable opinions about these affections or, failing this, of the greater number and most authoritative; for if we both resolve the difficulties and leave the reputable opinions undisturbed, we shall have proved the case sufficiently.[6]

In other words, according to Aristotle, we need not just to set down the *phenomena*, but also to preserve and reconcile them to the greatest extent possible.

This description of the endoxic method is most applicable to the *Nicomachean Ethics* discussion, because the *endoxa* there are, in effect, platitudes, and it is relatively easy to see how a philosophical theory can succeed in preserving platitudes. It is harder to see how

[5] In an influential article, Owen claimed that Aristotle uses *ta phainomena* ambiguously, taking it to refer to empirical data in the *Posterior Analytics* and to the *endoxa* in the philosophical writings (Owen 1961). Nussbaum persuasively argues that the apparent ambiguity stems from an overly narrow understanding of how Aristotle understands experience. When Aristotle talks about astronomical experience, she observes, he is describing how things appear, both to people in general and to the wise (Nussbaum 1986, ch. 8).

[6] *Nicomachean Ethics* VII.1 1145b2–7, trans. W. D. Ross, revised by J. O. Urmson, in ROT.

the model applies where the *endoxa* are the opinions of the wise, with whom Aristotle is almost invariably in significant disagreement. But actually, the endoxic discussions in both the *Physics* and the *Metaphysics* can be assimilated to the general model. In both places Aristotle makes a move that would later be made famous by Hegel. Basically, he preserves the *endoxa* by showing that they were imperfectly striving after a conceptual framework that would only be achieved in the writings of Aristotle. In the *Physics*, Aristotle presents his hylomorphic account of change as the culmination of his predecessor's partial insights. In the *Metaphysics* it is the doctrine of the four causes.

But the *De Anima* does not follow this approach. There must surely be *some* connection between the endoxic discussion in Book I and the hylomorphic definition of the *psuchê* with which Aristotle abruptly opens Book II. But it is not the proto-Hegelian connection that we find in the *Physics* and the *Metaphysics*. So, what is it?

Stephen Menn provides useful guidance: "*De Anima* 1 is important for interpreting the definition of soul in *De Anima* 2, because it helps to show what problems the definition is trying to solve."[7] As Menn points out, DA I plays an important *aporetic* role (by identifying *aporia*, puzzles). Moreover, the discussion of Aristotle's predecessors and contemporaries does not simply set out the problems in the manner, for example, of *Metaphysics* Beta, which is really just a list of puzzles. It also has a constructive dimension. In setting out the problems, Aristotle also makes clear, often with explicit argument, what he takes to be constraints on a satisfactory solution to those problems.

So, for example, the thinkers whom Aristotle considers in DA I held, without exception, that the *psuchê* is itself in motion—that was the only way they could explain how the *psuchê* could impart motion. Aristotle offers a range of arguments against the idea

[7] Menn 2002, p. 103. See also Witt 1992, who takes a broadly similar approach to DA I, and more recently Carter 2019.

that the *psuchê* is capable of moving itself. And so, since he has no wish to challenge the reputable opinion that the *psuchê* initiates motion, this plainly generates a constraint on any satisfactory account of the *psuchê*—namely, that it should explain how it can initiate motion without itself being in motion (in a non-derivative sense). The same holds for the theme of the relation between the *psuchê* and the body that Aristotle returns to at multiple points in DA I. Aristotle does not develop an explicit account of the relation, but in the course of his discussion he does seem to lay down certain basic principles that any theory of the *psuchê* has to respect. So, for example, any account has to explain how the *psuchê* acts through the body, how it unifies the body, and how and why it is destroyed when the body is destroyed.[8]

In order to see how these constraints emerge in the course of Aristotle's discussion, we need to start with the three characteristics that Aristotle describes his predecessors as having taken to be the defining features of the *psuchê*.

2.2 The three characteristics

Aristotle opens the second chapter of DA I by stating the importance of beginning with the *endoxa* "so that we may embrace what has been said rightly, and if anything has not been said rightly, that we may guard against it."[9] Interestingly, he then proceeds to connect two of the different senses of *phainomena* distinguished above in Section 2.1:

> The starting-point of this inquiry is to set out those things which seem most of all to belong to the soul by nature. What is

[8] The last of these is formulated more tentatively than the first two, as we will see further in Chapter 3.

[9] DA I.2 403b23–24, trans. Shields. Aristotle does not actually speak of *endoxa* here, but rather of the opinions of those who came earlier (*tas tôn proterôn doxas*).

> souled seems to differ from what is not ensouled chiefly in two respects: motion and perception. These are also very nearly the two features of the soul which we have taken over from our predecessors.[10]

This is one of the few places in DA I where Aristotle alludes to common beliefs about the *psuchê*. The expression "very nearly" (*schedon*) is important. Aristotle is looking ahead to a third characteristic that will be added to the list during the course of DA I.2. It turns out that earlier thinkers also took the *psuchê* to be incorporeal (*asômatos*).[11] Aristotle's point, arguably, is that incorporeality is *not* commonly believed to hold of the *psuchê*—it is more of a theoretical postulate.[12]

In any event, here are some brief remarks on the three characteristics:

> **Motion**.
> As already indicated, there is a double sense in which motion is characteristic of the *psuchê*. On the one hand, the *psuchê* initiates motion in the body. It is a principle (*archê*) of motion. Aristotle accepts this sense. But, on the other, the *psuchê* was also widely held to be itself in motion, and to initiate motion in virtue of its own motion. This view Aristotle rejects, as we will see in more detail in the next section (Section 2.3).

> **Perception**
> Aristotle is using 'perception' in a very broad sense when he discusses the *endoxa*. The word he uses is *aisthêsis*, which is his standard word for sense perception (used, for example, throughout Books II and III, when he investigates the five senses).

[10] DA I.2 403b24–28, trans. Shields.
[11] Aristotle is mildly inconsistent on this point. At 404b31 only some of them hold the *psuchê* to be incorporeal, while by the time we get to 405b11–12 they all do.
[12] For a different view of *schedon* see Shields's commentary at pp. 105–106.

However, the discussion in DA I.2 makes clear that it extends to things that we (and he) would typically take to be more cognitive. So, for example, at 404b9, he talks about "knowing and perceiving," and, more generally, he runs together those who, like Empedocles, think that like is known by like and those who take perception to be a defining feature of the *psuchê*. It would perhaps be better to describe what Aristotle is talking about here with a more general word, such as "cognizing."[13]

Incorporeality

The discussion throughout DA I makes clear that Aristotle is talking about incorporeality in a rather specific sense. The adjective that he uses (*asômatos*) is one of the words that Plato regularly uses to describe the *psuchê* in the *Phaedo*.[14] However, Aristotle understands what it is to be *asômatos* in a very different way from how it is understood in the *Phaedo*.[15] When he describes earlier thinkers as having taken the *psuchê* to be incorporeal, he typically means that they took it to be highly rarified—non-earthy, rather than non-physical. An incorporeal *psuchê* in this sense remains a physical phenomenon, with a determinate spatial location.[16]

For Aristotle, these accounts all share an important common feature. Despite differing on the defining feature of the *psuchê*, each

[13] This might not be a bad translation of *gnôrizein*, which he uses in this context at 409b25. Shields translates *gnôrizein* as 'know' here, but the verbal adjective *gnôristikon* as 'cognitive' at 404b28. Polanski uses the expression "principle of cognition" in his commentary (Polansky 2007, p. 85).

[14] See, for example, the first passage quoted from the *Phaedo* in Section 3.3 below.

[15] It is an interesting question (and one not, to the best of my knowledge, answered in the literature) why Aristotle does not discuss the *Phaedo* account in DA I. It may have something to do with the fact that he seems to have himself adopted a version of that view in early works such as the *Eudemus*. It may be because the *Phaedo* account does not connect the *psuchê* to the elements in the way that the other accounts he considers do. Or it may be because he thought Plato's theory in the *Timaeus* to be his (Plato's) considered view.

[16] Aristotle does not appear to use *asômatos* to describe the unmoved mover, or other entities that are plainly immaterial. Bonitz records only a handful of occurrences of the word, primarily in endoxic passages discussing the elements.

ties their chosen defining feature to the elements. They all try to explain how the soul can have the defining features it has because of its elemental composition. So, for example:

The elemental basis of motion
The atomists (Democritus and Leucippus) took motion to be the defining feature of the *psuchê*, both its own motion and its ability to impart motion. They explained both forms of motion by holding the *psuchê* to be composed of very fine, spherical particles that, because of their shape, could permeate the bodily atoms and move them through their own motion.

The elemental basis of perception
According to Aristotle, Empedocles was one of "those who say that because of its knowing and perceiving what exists in the *psuchê* is from the elements."[17] Empedocles's basic premises, he claims, are that (a) like is known by like, (b) everything is composed from the four elements (earth, water, fire, and air), and (c) the *psuchê* is capable of knowing everything. Putting all these together yields the conclusion that the *psuchê* must itself be a blend or compound of the four elements.

The elemental basis of incorporeality
As indicated above, to be *asômatos* is not necessarily to be immaterial, and Aristotle reports different views as to which of the elements is the rarest and the most fine-grained. In fact, there seem to be takers for each of the elements except earth. Democritus is supposed to have held that fire and the *psuchê* are both made up of the same type of (spherical) atom. Aristotle credits Diogenes with the view that the *psuchê* is air (which also, he says, explains how it can produce motion). To Heraclitus he

[17] DA I.5 410b16–17, trans. Shields.

> tentatively attributes the view that the *psuchê* is some sort of rising vapour from which all other things are composed.[18]

Those, then, are the *endoxa*, according to Aristotle—various theories striving to explain one or more of the three features variously taken to be definitive of the *puschê*, where the mode of explanation tends to involve theories of the *psuchê*'s elemental composition.

Aristotle's discussion in DA I does not map very precisely onto the *endoxa* as he presents them. It is true that the most sustained discussion is of whether and how the *psuchê* moves, which occupies much of DA I.3 and DA I.4. Moreover, the idea that the *psuchê* is defined by its perceptive/cognitive capacities is discussed in DA I.5, primarily with reference to its implications for elemental composition. That much is on message. However, there are two significant respects in which Aristotle's practice diverges from what one might expect, given how he has set things up:

- There is next to no discussion of incorporeality as a defining feature, although at various points in DA I Aristotle illuminatingly discusses the relation between the *psuchê* and the body.
- In DA I.4 Aristotle discusses the theory that the *psuchê* is an attunement (*harmonia*), which was not presented in DA I.2 as one of the *endoxa* and does not really seem to fit very well into the framework just sketched out.

The remainder of this chapter will focus on Aristotle's discussion of motion, as this falls squarely into the framework he has developed for treating the *endoxa*. The next chapter turns to his treatment of earlier theories of perception/cognition, and then to the

[18] This is actually a rather odd interpretation of Heraclitus, at least with respect to the fragments that we currently have, where, if he makes any element basic, it is fire. See, for example, B30 and B31. In fact, B36 suggests that it is death for the *psuchê* to become water (or perhaps: the death of the *psuchê* is the birth of water).

general topic of how he considers the relation between the *psuchê* and the body in DA I. This will include the *harmonia* theory, as that theory in essence analyzes the *psuchê* in terms of the organization and composition of the body.

2.3 Motion and the *psuchê*

The topic that receives the most attention in DA I is how and to what extent the *psuchê* moves. There are really two questions here.

(1) How and to what extent is the *psuchê* itself in motion?
(2) How and to what extent does the *psuchê* initiate motion?

As indicated in Section 2.2 above, Aristotle thinks that his predecessors ran these two questions together, because they assumed that nothing could initiate motion without itself being in motion. It was because they started from that assumption, and took it to be obvious that the *psuchê* initiates motion, that many of them devoted their energies to finding element-based explanations of the *psuchê*'s movement.

Many of Aristotle's most insightful discussions begin with the observation that something can be said in multiple ways (*pollakôs legetai*), so that we are required to attend to important distinctions in what might seem, at first sight, to be a unitary concept. Motion is no exception. The key distinction here is between things that move in virtue of themselves, and things that move in virtue of something else. After drawing this distinction at the beginning of DA I.3, Aristotle devotes most of the chapter to a series of arguments leading eventually to the conclusion that the *psuchê* cannot move in virtue of itself. It can only move in virtue of something else moving (i.e., the body). After discussing the *harmonia* theory in the first forty or so lines of DA I.4 (a discussion that focuses, at least in part, on motion), Aristotle devotes the remainder of the chapter

to motion, including an interesting and important discussion of whether the affections of the *psuchê* (perceptions and emotions, as well as thinking) are properly described as motions.

Here is how Aristotle presents his key distinction:

> Everything in motion is so in either of two ways: in virtue of another (*kath' heteron*) or in virtue of itself (*kath' hauto*). By 'in virtue of another' we mean whatever is moved by being in something which is in motion, as for instance sailors are; for they are not moved in the same way as the ship is – the one is moved in virtue of itself and the other by being in what is in motion. This is clear with regard to their parts. For the proper motion of the feet is walking, as it is of humans as well. But this does not belong to sailors.[19]

The general idea of motion *kath' heteron* is tolerably clear, if we think about movement relative to, say, the sea (and assume that the sailor is standing still). Relative to the sea, the sailor is indeed moving. But his movement is *kath' heteron* because it is the ship that is moving relative to the sea, while he himself is stationary relative to the ship. However, Aristotle does not give a fully satisfying account of what it is for something to move *kath' hauto*, in virtue of itself. The problem is explaining the notion in a way that applies both to the sailor and to the ship.

Aristotle would certainly say that sailors, when they walk about the deck of the ship, move *kath' hauto* because they are the source of their own motion. That seems to be so in two ways. First, the principle (*archê*) of the motion, as Aristotle would put it, is within them (to the extent that they voluntarily decided to move from one place to another). And second, the sailor's motion is due to the (*kath' hauto*) movement of his legs, feet, and so on. But, plausibly, only organisms can be the source of their own motion in

[19] DA I.3 406a4–10, trans. Shields.

both these two senses, and so the ship illustration rather muddies the waters. A trireme, for example, is propelled forward either by three rows of oarsmen or by its single sail. In the first case it is the source of its own motion in neither sense, while in the second it is the source of its own motion only to the extent that the sail is a part of the ship. But the sail itself only moves *kath' heteron*, due to the wind. Trying to assimilate organisms and artifacts causes problems for Aristotle here (as it does elsewhere, most prominently in some of his discussions of matter and form, as we will see in later chapters).

Aristotle could, it is true, restrict *kath' hauto* motion to organisms (excluding plants and non-moving [sessile] animals, such as clams). But then his question about the motion of the *psuchê* starts to seem a little *recherché*, given that the distinguishing feature of an organism is that it has a *psuchê*. When he asks whether the *psuchê* moves in virtue of itself or in virtue of another, he would in effect be asking whether the *psuchê* moves in the manner characteristic of (moving) things that have a *psuchê*. This may be too subtle even for Aristotle.

Perhaps the best we can do is bracket the notion of motion *kath' hauto* and focus instead on what it is for something to move *kath' heteron*.[20] Let's say that A moves in virtue of B when at least one of the following holds: (i) the principle of A's motion lies in B; (ii) A moves because B moves. Aristotle's principal positive conclusion from the discussion of motion in DA I is that the motion of the *psuchê* is *kath' heteron* in the second of these two senses. In brief, the *psuchê* moves because the body moves.

[20] A little later on in DA I (e.g., at 406b8), Aristotle shifts terminology and refers to motion that occurs not in virtue of itself as *kata sumbebêkos*. The adjective *sumbebêkos* is an important one for Aristotle and is standardly translated as 'accidental' or 'coincidental.' The thought now is not just that one thing A moves in virtue of another thing B, but that A moves because it coincides with B and B moves. How the two distinctions map onto each other is not completely clear.

So, how does Aristotle get to this conclusion? He offers a bewildering array of arguments in DA I.3 and DA I.4. St. Thomas Aquinas, whose commentary on *De Anima* is as methodical as it is insightful, identifies a grand total of twenty different arguments. He identifies six general arguments in the first part of DA I.3 (406a12–406b15), followed by an argument explicitly directed at Democritus's atomistic account (406b15–406b25), and then a further nine arguments against the theory of the *psuchê*'s motion proposed in Plato's *Timaeus* (406b26–407b26), followed by a final, more general argument. In DA I.4, after the initial discussion of the *harmonia* theory, Aquinas discusses what has become known as the "celebrated Rylean passage" (where Aristotle rejects the view that the affections of the *psuchê* count as motions), followed by two arguments against the thesis that the *psuchê* is a self-moving number.

Some of these arguments are more persuasive than others, to put it mildly. From the perspective of trying to understand the account of the *psuchê* that Aristotle will shortly offer at the beginning of DA II, four in particular stand out, three from DA I.3 and one from DA I.4. For ease of reference, I have given names to the first three, which are currently anonymous in the literature. Here they are with their locations in the text of DA.

- The resurrection *reductio* (I.3: 406a30–406b6)
- The Philippus/Democritus argument (I.3: 406b15–406b25)
- The magnitude *reductio* (I.3: 407a2–407a32)[21]
- The Rylean passage (I.4: 408a34–408b18)[22]

I will discuss them in order.

[21] For the record, Aquinas identifies five separate arguments in what I am calling the magnitude *reductio*.

[22] The name is due to Jonathan Barnes (Barnes 1971–1972, p. 103). It is presumably tongue-in-cheek. Ryle was well versed in Greek philosophy, and it seems more appropriate to identify Aristotelian passages in Ryle.

The resurrection *reductio*

The background to this argument is Aristotle's general observation earlier in DA I.3 that there are four different kinds of motion. These are locomotion, alteration, growth, and decay.[23] He then turns to the assumption discussed earlier, that the *psuchê* transmits motion through being in motion itself. If the assumption is true, Aristotle argues, it seems plausible that the *psuchê* and the body both move in the same way. So, since the body moves by locomotion, so too must the *psuchê*. But then, he argues, if the *psuchê* is capable of moving from one place to another, it would be capable of leaving a body and then returning to it, which would permit what he takes to be the obviously absurd possibility of the resurrection of the dead.[24]

It is clear that what Aristotle means is bodily resurrection. In the *Phaedo*, Socrates playfully describes the disembodied *psuchai* of people who have been too closely tied to the body in life as floating around graveyards and tombstones. This would not trouble Aristotle in the same way. Any reader of Homer would be familiar with the idea of the dead leading a wraith-like existence in the underworld. The problem with conceding locomotion to the *psuchê*, according to Aristotle, is that it would allow a dead body to return to life. Aristotle does not actually explain why he thinks that the resurrection of the dead is so obviously absurd. Hicks offers the following on his behalf: "That the dead should rise again is to Greek ideas the typical instance of an event antecedently incredible as reversing the established order of nature."[25] In support of this claim,

[23] This is a good moment to point to a challenge in translation. When Aristotle uses the verb *kinein*, standardly translated as 'to move,' he typically uses it to mean 'locomotion' or 'movement with respect to place.' When he uses the corresponding noun *kinêsis* he uses it more broadly, so that locomotion is merely one kind of *kinêsis*. For that reason, Shields, and other translators, often use 'change' for *kinêsis*. This is certainly better English, but there is a danger of obscuring the connection between *kinein and kinêsis*.

[24] The implicit assumption here is presumably that a *psuchê* whose movement is so tied to the movement of the body that it cannot leave the body would properly be described as moving *kath' heteron* rather than *kath' hauto*.

[25] Hicks 1907, p. 249, citing Bonitz.

Hicks quotes a passage from Book III of Herodotus's *Histories* where Herodotus at 3.62 appears to use the idea that Astyages the Mede might return from the dead as a touchstone of absurdity. Ross quotes the very same passage in his own commentary, saying that it is a *reductio* comparable to Aristotle's.[26]

There are problems with this, however. Taken in context, the passage from Herodotus does not come close to illustrating Hicks's point. The speaker is the general Prexaspes, who is reporting back to the Emperor Cambyses.[27] Prexaspes is assuring Cambyses that he (Prexaspes) really did kill Cambyses's younger brother Smerdis the Magus, as instructed. He says:

> My lord, it cannot be true that your brother Smerdis has revolted against you . . . for I did just as you ordered, and I buried him with my own hands. If the dead have risen, you had better also watch out that Astyages the Mede does not revolt against you as well. However, if the world goes on as it did before, then that man will never be a source of mischief again.[28]

This is hardly taking the possibility of resurrection as a *reductio ad absurdum*. It is really no more than a rhetorical flourish.

In fact, the idea of resurrection does not appear to have been quite as alien to the Greek mind as Hicks suggests—at least if we take literature and mythology as our guides. We have already encountered one character who was resurrected from the dead. Alcestis, in Euripides's eponymous play, agreed to die in order to allow her husband Admetus to live, and die she does, only to be brought back to life by Herakles. For another example, consider Pelops, the son of King Tantalos of Lydia. The myth has it that Tantalos tested the gods by dismembering his son and feeding

[26] Ross 1961, p. 188.
[27] Ross mistakenly attributes the speech to Cambyses himself.
[28] Herodotus, *Histories* 3.62, trans. A. L. Purvis in Strassler 2007.

the parts to them at a banquet. The deception was discovered, but only after Demeter had eaten part of Pelops's shoulder. Pelops was reassembled and brought back to life, with an ivory shoulder provided by Hephaestus. He subsequently enjoyed a distinguished career as, first, the lover of Poseidon and then as husband of Hippodamia, king of Pisa, and inspiration for the Olympic games. There is scanty documentary evidence for the Pelops myth before Aristotle, but it was certainly well enough known for Pindar to offer a revisionary account in his First Olympian Ode.

So, the idea of bodily resurrection cannot have been *completely* alien to the Greek sensibility, which leaves Aristotle's *reductio* argument somewhat hanging. We can probably best make sense of the argument by combining it with a subsequent line of reasoning in the closing lines of DA I.3, where Aristotle explains why he thinks that *metempsychosis* (the transmigration of souls) is an absurd idea. Aristotle's basic idea there is that *metempsychosis* only makes sense if you ignore the close connection between the powers of the *psuchê* and the body through which it exercises them. What he finds egregious is the idea that a *psuchê* fitted to a body organized one way should be transposed into a body organized completely differently. We will look at this important passage in more detail in Chapter 3. Plainly, Aristotle's objections to transmigration will not extend to resurrection (which involves the return of the *psuchê* to its original body). But it seems possible to reconfigure Aristotle's argument using transmigration rather than resurrection. After all, if a *psuchê* were capable of locomotion, would that not equally make it possible for it to move from one body to another?

This strategy would make the *reductio* part of the argument stronger. However, the argument as a whole is somewhat unconvincing. Aristotle's reasoning is modal. It is enough, he thinks, to show that granting the power of locomotion to the *psuchê* would be consistent with the *possibility* of *metempsychosis*. But the argument thus construed seems to undermine itself. If the relation between the *psuchê* and the body is indeed as it would have to be for

metempsychosis to be truly absurd, then there is no need to bring locomotion into the discussion. He can't have it both ways. If a *psuchê* could move into an animal body, then *metempsychosis* cannot be impossible. But if it really is impossible, then allowing the *psuchê* to locomote could not make it possible.

This argument probably tells us more about how Aristotle saw the relation between *psuchê* and the body than about the possibility of the *psuchê* actually being in motion. For that reason, we will return to it in later chapters. For the present, the principal take-home message from this argument is that any satisfactory account of the *psuchê* must explain how the *psuchê* moves (in the sense of locomotion) in virtue of the body moving, rather than independently of it.

The Philippus/Democritus argument

This argument, to be found in DA I.3, is interesting both in itself and for the conclusion that Aristotle draws at its end. Aristotle's explicit target is Democritus, but the argument generalizes easily to any attempt to explain the movement of the body through the movement of some incorporeal (i.e., fine-grained) physical elements. Aristotle sets the position up in this way:

> Some say that as the soul is in motion; it moves the body in which it is, e.g. Democritus, speaking in a manner much like the comic playwright Philippus. For Philippus claims that Daedalus made his wooden Aphrodite move by pouring liquid silver into it. What Democritus says is similar; he claims that since the indivisible spheres are in motion, because it is their nature never to remain still, they draw the whole body along with them, and set it in motion.[29]

[29] DA I.3 406b15–22, trans. Shields.

As with the transmigration reductio, the envisaged scenario is one where the *psuchê* transmits locomotive movement to the body. The novel twist here is that the movement is communicated through contact.

Aristotle's reply is terse. He simply points out that it is most unclear how a *psuchê* in constant motion could cause the body to *stop* moving. We can flesh this out a little. The problem is not simply explaining how something that is made up of constantly moving atoms can be at rest. It is not hard to imagine that the movements might cancel each other out, so that the body as a whole remains in some sort of equilibrium state. Aristotle's point, I take it, is that any satisfactory account of the *psuchê*'s role in bodily movement must account for how it initiates motion and how it brings motion to an end. Being in motion is not the same as being put in motion, and being at rest is not the same as being brought to rest. These are different types of state, requiring different types of explanation.

John Philoponus, the sixth-century Alexandrian commentator, remarked on this passage that Democritus makes the operation of the *psuchê* a process of pushing and dislodgment.[30] And that is the real difficulty. The mechanical operations of one atom pushing and dislodging another can certainly explain how movement is communicated. So, these operations can explain how the body moves, if we consider the body simply *qua* physical object. But, I suspect, Aristotle's point is that that is not the correct *explanandum*. When we are considering the relation between the *psuchê* and the body, we are typically considering *actions*, rather than just the bodily movements that actions typically involve. And actions require a fundamentally different type of explanation.

In particular, what we need to explain is how actions come about. That is why Aristotle concludes his brief discussion with the

[30] Quoted in Hicks 1907 at p. 251. Hicks gives "leverage" for Philoponus's *mochleia*, but this doesn't seem to work well in the atomistic context—how can one indivisible atom exert leverage on another? 'Dislodgment' seems more accurate and is the sense given by LSJ, who proposes 'leverage' as one of the senses of the related word *mochleusis*.

remark: "In general, the soul does not appear to initiate motion in animals in this way, but rather through some sort of decision and reasoning."[31] This remark brings into the picture two concepts that play a very important role in his theory of action—*proairesis* (decision, choice) and *noesis* (reasoning, here being discussed in a practical sense). Aristotle will return to these themes toward the end of *De Anima*, particularly in DA III.9–11. We can see that later discussion as part of his response to the general constraint emerging from this discussion, namely, that any satisfactory account of the *psuchê* must explain the distinctive way in which it brings about *actions*, as opposed to bodily movements.

The magnitude *reductio*

During his extended discussion of Plato's *Timaeus* in DA I.3, Aristotle considers a fundamental feature of the conception of the *psuchê* developed in that dialog, which is completely different from the view developed in the *Phaedo* (and the *Republic*). Aristotle is discussing the section of the *Timaeus* known as the *Psuchogonia*, where Plato describes how the Demiurge creates what commentators typically call the World Soul.[32] Plato's cosmology is rather baffling, but fortunately Aristotle only engages with one of its most general features, and he does so in a way that seems intended to generalize to a more human context.

Here is Aristotle's presentation of his target: "In the same way, Timaeus offers a physical account of how the soul moves the body: by being in motion itself, the soul moves the body because of its being entangled with it."[33] It is probably no accident that the theory of the *Timaeus* is considered immediately after Democritus's

[31] DA 406b24–25, trans. Shields.
[32] The relevant passage is *Timaeus* 34b–36d.
[33] DA 406b26–28, trans. Shields, who takes the name 'Timaeus' to refer to the character in the dialog, rather than to the dialog (see p. 126).

theory. Both are versions of the basic idea that the *psuchê* has corporeal features and permeates the body, which is what allows it to communicate its own motion to the body. Theorists who think about the *psuchê* in this way can develop the position in one of two general ways. They can hold that the *psuchê* permeates the body discretely, or they can hold that it does so continuously. Democritus took the first option. His spherical *psuchê*-atoms are intermingled with the bodily atoms. Plato in the *Timaeus* takes the second option. Here is where things end up with the Demiurge (it is Timaeus speaking):

> Once the whole soul had acquired a form that pleased him, he who formed it went on to fashion inside it all that was corporeal, and, joining center to center, he fitted the two together. The soul was woven together with the body from the center on out in every direction to the outermost limit of the universe, and covered it all around on the outside.[34]

To put this in more modern language, Timaeus seems to be envisaging the *psuchê* as being *coextensive* with the body. They simultaneously occupy the same region of space, and so the *psuchê* permeates the body continuously.

If the *psuchê* is coextensive with the body, permeating it continuously, then it will be a magnitude (*megethos*), in Aristotle's sense. Aristotle offers a range of reasons for thinking that the *psuchê* cannot be a continuous magnitude. His arguments are directed at Plato, but they seem to apply more generally. If they are effective, then that closes off the option left open by the earlier discussion of Democritus, and so eliminates the possibility that the *psuchê* moves the body by being "entangled" with it, in Aristotle's phrase.[35]

[34] Plato, *Timaeus* 36d9–e4, trans. D. J. Zeyl in Cooper 1997.

[35] Aristotle uses the verb *sumplattein*, which he also uses a few pages further on to describe how the notions of number and motion are combined in the conception of the *psuchê* as a self-moving number. It appears to have both a logical and a physical sense. See Bonitz and LSJ.

If the *psuchê* is a magnitude, says Aristotle, then it will be continuous (*sunechês*). Continuity brings with it homogeneity and infinite divisibility. So, on this way of thinking about the *psuchê*, it will be a homogenous and infinitely divisible kind of stuff—not immaterial, but highly subtle and rarified. The obvious question to ask is: How can a homogenous and infinitely divisible stuff perform the distinctive functions of the *psuchê*? And Aristotle basically poses multiple versions of this question. The function he focuses on is reasoning (*noêsis*), since that is the sole function of Timaeus's world-soul, but actually we will see that his arguments generalize pretty well.

The basic problem is that reasoning is a discrete process, and Aristotle cannot see how a discrete process can be carried out by a continuous magnitude. Here is how he puts the point:

> But reason is one and continuous in the way that reasoning is, and reasoning is one as the objects of thought are, not as a magnitude is. This is why reason is not continuous in this way, but is either without parts or is continuous in a way other than the way a magnitude is.[36]

This is somewhat compressed and obscure, but here is one way of fleshing it out into a plausible argument.

To reason is to pursue a series of thoughts, where it is clear where each thought ends and the next begins. These thoughts are typically different, which is why reasoning can lead to discovery. The continuous *psuchê,* however, is homogenous. No part that one might pick out has any distinguishing features relative to another. And in fact nothing really counts as a part at all, because the process of division can continue indefinitely. So what, Aristotle is asking, is the connection between individual thoughts and the continuous *psuchê*?

[36] DA I.3 407a6–10, trans. Shields.

Imagine that you are running through the steps of an argument in your mind. This is somehow being achieved by the *psuchê*, *qua* continuous magnitude. But how? Either each individual thought is thought by a part of the continuous magnitude, or the whole magnitude thinks all of them. Neither option seems to make much sense. The continuous magnitude doesn't have parts in any strict sense, as we have just seen—and if there is a part corresponding to every division that can be made then there are surely too many parts.[37] But, on the other hand, if the whole magnitude thinks all of them, then it is hard to see how the individual thoughts can differ from each other. This whole line of thought seems a dead end.

The difficulty does not arise simply because reasoning does not (according to Aristotle) involve a bodily organ. A very similar set of problems arises if we consider (as Aristotle does not, since his immediate focus is the *Timaeus*) how perception might work in virtue of the sense organs being "entangled" with the *psuchê qua* continuous magnitude. Different parts of the body perform different sensory functions, obviously. How do those parts map onto the continuous magnitude? At least in this case we can use spatial criteria, so that the eye, for example, corresponds to the coextensive region of the *psuchê* magnitude. But homogeneity raises a problem here too. Presumably the *psuchê* operates differently through the eye than through the ear. But what could explain that? There is no intrinsic difference between one region of *psuchê*-stuff and another, any more than there is between one part of a line and another. Therefore, there is no reason to think that the postulate of a *psuchê*, *qua* continuous magnitude coextensive with the body, is going to be any more successful explaining perception than it is in explaining reasoning.

[37] Not to mention a problem that Aristotle doesn't consider, which is that any thought will presumably have to contain, in some sense, the thoughts corresponding to all the divisions that can be made in the continuous magnitude that corresponds to it. For more on Aristotle's discussion of the *Timaeus* see Carter 2017.

So, two constraints seem to emerge from the lengthy discussion inspired by Plato's *Timaeus* in DA I.4. The first is that no satisfactory account can take the *psuchê* to be a magnitude, while the second is that any satisfactory account of the *psuchê* must explain how it can carry out its basic functions and operations.

The Rylean passage

We turn now to what Jonathan Barnes has called the celebrated Rylean passage in DA I.4. It is amusing to think of Aristotle somehow prefiguring the Oxford of the middle years of the twentieth century, but of course the reason that this passage looks familiar is simply that Ryle and most other philosophers of the time had read Aristotle very carefully.

In any event, the passage in question occurs after the discussion of the *harmonia* theory (the theory that the *psuchê* is an "attunement" of the body) and (what Aristotle takes to be) related ideas from Empedocles. Aristotle introduces a change in topic by flagging what seems on the face of it to be a better way of arguing that the *psuchê* is in motion. The guiding idea is that, since the operations and functions of the *psuchê* are motions, the *psuchê* itself must be in motion. As Aristotle puts it:

> We say that the *psuchê* is pained and pleased, is confident and afraid, and further that it is angry and also that it perceives and thinks. But all of these seem to be motions. On this basis one might say that the *psuchê* is in motion.[38]

Instead of thinking about the *psuchê*'s role in bringing about bodily movements, Aristotle turns to the *psuchê*'s own functioning in

[38] DA I.4 408b1–4, trans. Shields.

the search for a sense in which the *psuchê* is properly said to be in motion.

Aristotle's response to this suggestion is characteristically subtle. He appears to begin by conceding most of the points made. He states: "Let it be the case that being pained or pleased or reasoning are motions, and that each of these counts as being moved, and that the movement is effected by the *psuchê*."[39] Actually, though, Aristotle's position is somewhat more guarded, and Shields's translation brings this out.[40] Aristotle is only granting at least some of these points for the sake of argument.[41] As we will see in later chapters, there are lengthy explanations at various points in DA II of why perception is not a motion, and likewise for reasoning in DA III. For these reasons, Aristotle is best read as claiming that the inference his imaginary opponent is making is invalid—even if we grant all those things (which we shouldn't), it *still* would not follow that the *psuchê* is in motion.

So—why is the inference invalid? Here is what Aristotle says:

> Yet, saying that the *psuchê* is angry would be like saying that the *psuchê* weaves or builds. For it is perhaps better not to say that the *psuchê* pities, or learns, or thinks, but that the human being does these things with the *psuchê*; and this is not insofar as there is motion in the *psuchê*, but rather because motion sometimes reaches as far as the *psuchê*, and sometimes proceeds from it.[42]

[39] DA I.4 408b5–7, trans. Shields.

[40] J. A. Smith in the Revised Oxford Translation begins the sentence "We may admit to the full that." I am not sure that Aristotle would want to make such admissions. Shields offers a better rendition of the crucial compound particle *ei kai*, which in this case seems to imply that the condition is unfilled (e.g., 'even if, indeed'—see the discussion of *ei kai* in Denniston 1950 at pp. 299–303).

[41] Aquinas's commentary is helpful in reminding the reader throughout DA I that Aristotle is often arguing from premises that he does not accept. For his discussion of this passage see pp. 82–83 in Pasnau's translation.

[42] DA I.4 408b11–16, trans. Shields.

This passage has provoked lively debate. On one interpretation (the Rylean interpretation, favored by Barnes), Aristotle is denying that the *psuchê*, properly speaking, is the subject of psychological states and processes, such as thinking and perceiving. Properly speaking, the subject of such states and processes is the human being as a whole.[43] Others, most notably Shields, have pushed back, observing that Aristotle actually does attribute psychological states and processes to the *psuchê* throughout *De Anima* and that the Rylean interpretation seems incompatible with his insistence in DA II.1 (and in the *Metaphysics*) that the *psuchê* is a substance.[44]

There may be no need to take sides here, however. If, as seems plausible, Aristotle is challenging the validity of a hypothetical argument, then we can take his remarks as more *ad hominem* than *in propria persona*. Aristotle may be saying something like this:

> Even for someone who thinks (incorrectly, as it happens) that perceiving, thinking, and so on are motions, and that they have their source in the *psuchê*, it still wouldn't *follow* that the *psuchê* itself is in motion. It would be perfectly reasonable to say that it is the human being who perceives and thinks, in which case it is the human being that is moving, not the *psuchê*.

If this is right, then what we have here is not really a doctrinal claim, but rather the flagging of a problem.[45] The argument from the operations of the *psuchê* to the motions of the *psuchê* is invalid. But that still leaves us with puzzles to resolve. We need to explain the precise sense in which the *psuchê* is the source of perception, thinking, and other psychological states, processes, and operations. That would be in line with the general approach that we are taking to DA

[43] It also has echoes of P. F. Strawson's argument in *Individuals* that the concept of a person is primitive and that to which states of consciousness and mental processes are properly attributed (Strawson 1959, particularly ch. 3).

[44] See Shields 1988 for a thorough discussion.

[45] For a different reading of the Rylean passage see Carter 2019.

I, as setting up the subsequent discussion in DA II and DA III by identifying constraints upon a satisfactory account.

* * *

Pulling together the strands of the discussion of these four arguments, here are the key constraints emerging from Aristotle's discussion of the various ways in which his predecessors tried to establish that the *psuchê* moves the body in virtue of itself being in motion.

(1) Any satisfactory account of the *psuchê* must explain how the *psuchê* moves (in the sense of locomotion) in virtue of the body moving, rather than independently of it.
(2) Any satisfactory account of the *psuchê* must explain the distinctive way in which the *psuchê* brings about *actions*, which are more than just bodily movements.
(3) No satisfactory account can take the *psuchê* to be a magnitude.
(4) A satisfactory account of the *psuchê* must explain how the *psuchê* can perform its distinctive functions and operations—and, in particular, the precise sense in which the *psuchê* is the source of perception, thinking, and other psychological states, processes, and operations.

In the next chapter we will turn to the other prominent themes in DA I in order to explore the further constraints that emerge from Aristotle's discussion of his predecessors and contemporaries.

Further reading

Most discussions of Aristotle's endoxic method begin with Owen 1961, to which ch. 8 of Nussbaum 1986 is a useful corrective. Scholarly discussion has focused on *Nichomachean Ethics* VII, with some doubting the standard view of how the method is supposed to work in ethics (e.g., ch. 10 of Scott 2015). For

two diametrically opposed discussions of *endoxa* and dialectic see Irwin 1988 and Smith 1993.

The first part of Menn 2002 (pp. 83–102) is a most helpful introduction to DA I and how it sets up the rest of the discussion in *De Anima*. See also Witt 1992. Carter 2019 is a book-length discussion of Aristotle's on his predecessors and contemporaries in DA I.

Aristotle's treatment of motion and the *psuchê* in DA I is exhaustively treated in chs. 2 and 3 of Polansky 2007, but Shields's commentary is more focused (Shields 2016). The discussion of motion in DA I has seemed to some to be in tension with Aristotle's more general discussion of motion in *Physics* VIII—for discussion see Freeland 1994 and essay 2 in Nussbaum 1978.

3

Psuchê and *Sôma* in *De Anima* Book I

Focus Texts *De Anima* Book I, with particular emphasis on DA I.1, I.4, and DA I.5
Plato, *Phaedo*, particularly 85e–86d and 91c–95a

The previous chapter focused, first, on characterizing Aristotle's endoxic method in DA I (and elsewhere), and then on his critique of the dominant idea that the *psuchê* is a source of motion through itself being in motion—one of the two widely accepted defining features of the *psuchê* identified at the beginning of DA I.2. The discussion of motion and self-motion is relevant, of course, to the general question of how the *psuchê* relates to the body (*sôma*), since the body is what the *psuchê* moves. But DA I also contains several other important passages focused explicitly on the *psuchê* and the body. These are interesting and insightful on their own terms, while also placing important constraints on any satisfactory account of the *psuchê*.

We begin, in Section 3.1 by examining an important passage in the second half of DA I.1, where Aristotle discusses the affections of the *psuchê* and their bodily concomitants. In this discussion he explains what it would be for the *psuchê* to be separable (*chôristos*) from the body. Then, in Section 3.2 we turn to the closing sentences of DA I.3, where he talks about the need for any plausible account of the *psuchê* to take into account its commonality (*koinônia*) with the body. Immediately after the *koinônia* discussion, Aristotle considers the theory, familiar to readers of Plato's *Phaedo*, that the *psuchê* is an attunement (*harmonia*) of the body. After discussing the *harmonia* theory in the *Phaedo* in Section 3.3, Section 3.4 explores Aristotle's own discussion. Finally, in Section 3.5, we

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return to the second of the endoxic defining features of the *psuchê*, namely, its capacity for perception/cognition and how Empedocles and others tried to explain that capacity by taking the *psuchê* to be composed of the elements.

3.1 The affections of the *psuchê* and the question of separability

In DA I.1 Aristotle sets out what he takes to be the key theoretical puzzles and problems posed by the *psuchê*. So, for example, he raises the following questions:

- Is the *psuchê* a substance or does it fall under one of the other categories (of quantity or quality, for example)?
- In what sense, if any, can the *psuchê* be said to have parts?
- Is there a single account of *psuchê* common to all living things, or do we need to give different accounts for different types of thing?

The puzzles and problems that he raises in the first half of the chapter are not discussed in much detail. Aristotle states the problem succinctly and then moves on. The discussion is very programmatic—at least until he arrives at the affections of the *psuchê*. At that point he sets out a puzzle, and then launches into a discussion that lasts until the end of the chapter.

Here is the initial puzzle:

> There is also a puzzle about the affections of the *psuchê*, concerning whether all are common to what has the *psuchê* as well or whether there is something peculiar to the *psuchê* itself. This it is necessary to grasp, but it is not easy.[1]

[1] DA I.4 403a2–5, trans. Shields.

The Greek word translated as 'affections' is *pathê* (singular = *pathos*), which often has a fairly circumscribed meaning (passions, or emotions). Here, though, it seems from the context to refer to everything that the *psuchê* not only undergoes (e.g., emotions and sensations), but also the things that it actively does (such as reasoning). So, Aristotle's question is whether everything that the *psuchê* does or undergoes involves the body, or whether there is something that is proper to, or peculiar to, the *psuchê*.

But what does 'peculiar to' mean here? Aristotle, of course, has an answer. The contours of that answer begin to emerge almost immediately. He offers the following proposal by way of clarification.

> If, then, some one of the functions or affections of the *psuchê* is peculiar to it, it would be possible for the *psuchê* to be separated; but if there is nothing peculiar to it, it would not be separable.[2]

Separability here is, of course, separability from the body. So, what Aristotle is suggesting is an equivalence between the *psuchê* being separable from the body and it having some function or activity peculiar to it.

Still, this does seem to push the problem another step back, because one might reasonably ask Aristotle what counts as being separable from the body. The first thing to say is that *chôristos*, the Greek adjective standardly translated as 'separable,' is ambiguous. It can mean either 'separate,' or 'capable of being separated.' The most obvious way of understanding what is going on is that Aristotle holds that the *psuchê* is separable from the body just if it can exist separately from the body. So, separability, in this sense, means something like: capable of independent existence. In his preliminary treatment of the matter, in a sentence that comes in between the two sentences just quoted, Aristotle is clear that *most* of the affections of the *psuchê* seem to be things that actually depend

[2] DA I.4 403a10–12, trans. Shields.

upon the existence and involvement of the body. He specifically mentions anger, confidence, and perceiving. But there is a possible exception, which is the exercise of *nous* (intellect or reason). This is the first mention in *De Anima* of what will be one of the central themes of DA III—namely, the nature of *nous* and the extent to which it is properly described as separable. But we will tackle that thorny problem when we get to it.

What matters for the moment is how separability is to be understood, and, as one might expect, being separable is said in more than one way. Aristotle offers an illustration/example, which, although initially puzzling, actually makes the point rather well. He is trying to explain what it would mean, were the *psuchê not* to be separable.

> Rather, it will be just like the straight, insofar as it is straight: though it has many properties, for example touching a bronze sphere at a point, nevertheless, when it is separated, the straight will not touch the sphere in this way; for it is not something separable, since it always involves some body.[3]

Aristotle thinks that the objects of mathematics, such as straight lines (i.e., the straight) and points, do not really exist independently, but are instead abstractions from real, physical quantities. There is no such thing as an extension-less point, or a one-dimensional line. The only points that exist have extension, and every line has some depth, because lines and points are really properties of regions of matter. It is useful for the purposes of geometry to consider points in abstraction from extension, and lines in abstraction from breadth, but that is not, strictly speaking, how things are. In other words, when we talk about geometrical lines and say things like "a line touches a bronze sphere at a point," we are treating line and point as if they were capable of independent existence, when they

[3] 403a12–16, trans. Shields.

are really not. They are not *really* separable, but our best theoretical account of them treats them *as if they were* separable.

Aristotle typically describes this type of separability as separability *in account* (*logô[i]*). This word, *logos*, is one of the most important words in Aristotle, and 'account' is just one of its meanings.[4] Sometimes it simply means 'word' or 'statement'. Sometimes (as in the *harmonia* theory that we will consider in Section 3.2) it means 'ratio' or 'proportion.' It can also mean the essence of something, as well as the definition that specifies that essence. When Aristotle says that something is separable in account, he is probably best understood as referring to *logos* in the sense of essence-specifying definition. That would certainly fit the example of the straight line. We will return to this shortly.

So, separability in account is a genuine form of separability, even though things that are separable in account are not necessarily capable of independent existence.[5] As the ensuing discussion reveals, though, applying this notion to the affections of the *psuchê* is not completely straightforward.[6] One challenge is that there are different types of account of psychological phenomena, and an affection may be separable from the perspective of one account, but not from the perspective of another. Aristotle gives a nice illustration. He points out that the body is itself directly affected in, for example, anger, gentleness, fear, and pity. He then goes on to observe that not every account of the affections of the *psuchê* will take this involvement into account. He writes:

[4] Bonitz, in his *Index Aristotelicum*, identifies multiple different meanings across the whole Aristotelian corpus, organized into the following four broad families: (i) word, language, speech; (ii) the thoughts and ideas referred to by the items in (i), including for example definitions; (iii) the faculty of thinking and reasoning; and (iv) proportion and ratio in a broadly mathematical sense.

[5] There is a usage in Greek of *logô(i)*, on which it means something like the English 'in name only.' See, for example, line 1395 of Sophocles's *Oedipus Rex* where Oedipus describes himself as being of the Theban royal family *logô (i)*, because he has been revealed to have been a foundling. This is *not* what *logô(i)* means here.

[6] The discussion from 403a16 to the end of DA I is not optimally structured, and I am jumping around in the text to reconstruct Aristotle's argument.

> The natural scientist and the dialectician would define each of these affections differently, for example, what anger is. The dialectician will define it as a desire for retaliation, or something of this sort, while a natural scientist will define it as boiling of the blood and heat around the heart.[7]

Aristotle's discussion here can plausibly be read as implying that it would be a mistake to conclude (from the fact that the dialectician's definition does not make reference to the body) that the *psuchê* is separable in account. The problem is that the dialectician's account seems partial, and, as suggested earlier, describing something as separate in account is possible only when we have an account that specifies that thing's essential nature.

At this point in *De Anima*, Aristotle is not really in a position to identify the right account, either of the *psuchê* as a whole or of any of its affections, but he has a pretty good idea of what that account is going to look like. He observes that that there are many examples of the body being directly involved in psychological occurrences, and Aristotle gives a number of subtle illustrations of how the involvement of the body seems essential. He observes, for example, that:

- We can fail to be angered or provoked, even when the situation seems to warrant it—presumably because the body is not appropriately stimulated/agitated.
- We can be angered or provoked by seeming trifles, because the body is inappropriately stimulated.
- We can undergo fear even when nothing fearful is present.

For all these reasons, Aristotle thinks that correct and comprehensive accounts of the affections of the *psuchê* will look something like this: "being angry is a sort of motion of a body of such a sort, or of

[7] DA I.1 403a27–403b1, trans. Shields.

a part or capacity of a body, brought about by this for the sake of that."[8]

Aristotle sums up his position by saying that "the affections are *logoi enuloi*."[9] This is a puzzling expression that has elicited a fair amount of discussion. The tricky issue is how to understand the word *enulos*, which (according to Bonitz) here makes its first (and only) appearance in Aristotle's writings, and then (according to LSJ) does not occur again until the later Greek commentators, and then only infrequently. Etymologically, it is derived from *hulê*, which is Aristotle's word for matter (derived from its primary meanings, which have to do with wood and woodland). Read most literally, then, a *logos enulos* is an enmattered account, which is how the expression is translated by J. A. Smith in the *Revised Oxford Translation*. Shields is suspicious of the word *enulos* and prefers to read *logoi en hulê*, which he translates fairly literally as 'accounts in matter.' In the commentary he suggests that Aristotle is taking *logos* in a sense closer to 'form' or essence,' and so should be understood as referring to the thing of which an account is being given. Over a century earlier, Hicks had preserved the word *enulos*, but offered a similar translation: "forms or notions realized in matter."[10]

It is true that Aristotle does mention the key notions of matter and form a few sentences later, but Hicks and Shields may be reading too much of Aristotle's considered opinion into this programmatic discussion. On balance, it seems best to follow Ross, who translates *logoi enuloi* as "accounts that make reference to matter."[11] It does seem that Aristotle is talking about the accounts here, rather than that of which they are the accounts (even though,

[8] DA I.1 403a26–27, trans. Shields.
[9] DA I.1 403a25, trans. Shields.
[10] Hicks 1907, p. 7.
[11] In support of his reading, Ross points to *Metaphysics* 1033a4, where Aristotle says that the bronze circle has matter in its account. Charles seems to interpret the expression similarly in his 2021.

in Aristotle's considered view, the notions of account, essence, and form are significantly interchangeable).

In any event, this discussion reveals a very clear constraint on Aristotle's eventual account of the *psuchê* to set alongside those identified in the previous chapter. The account must be a *logos enulos*. It must make reference to matter. In fact, as the discussion in DA I makes clear, it must make reference to the bodily concomitants of the processes, states, and activities of the *psuchê*.[12] In the next section we turn to how Aristotle refines this general idea with a more precise conception of the commonality (*koinônia*) between *psuchê* and body.

3.2 Reincarnation and commonality

This section turns to DA I.3, which is divided into two parts. The first half (up to 406b25) is taken up with a general discussion of motion and the *psuchê*, some of which we reviewed in detail in Section 2.3. The second half (406b26–407b11) is an intricate discussion of Plato's *Timaeus*, including the discussion of whether the *psuchê* is a magnitude, also discussed in Section 2.3. At the end of the chapter, Aristotle broadens the discussion, remarking that: "something absurd turns out for this account, as for most others concerning the soul."[13] This leads into a compact but significant discussion that lays down important groundwork for Aristotle's official definition of the *psuchê* at DA II.1.

Aristotle's general objection is to accounts of the *psuchê* that proceed without tackling the complex connections between the *psuchê* and the body. Here is how Shields translates his first statement of the problem: "they conjoin the *psuchê* to the body and

[12] For an insightful discussion of Aristotle on anger in DA I (and on *logoi enuloi* more generally), see Charles 2009.

[13] DA I.3 407b13–14, trans. Shields.

place it in the body without articulating in addition the cause of this or the condition of the body."[14] The text is a little compressed and tricky to interpret. As Shields translates, there are two separate things puzzling Aristotle—on the one hand, the cause of the *psuchê* being conjoined to the body and, on the other, the condition of the body. It seems odd, in the light of what is coming up in the next few sentences, to present these as distinct from each other. Moreover, as written, there is no indication of *why* anybody should be concerned with the condition of the body at all.

On another, perhaps preferable, reading, Aristotle's concern is that many (but not all) existing accounts of the *psuchê* fail to explain how the general disposition of the body allows (and is required for) the operation of the *psuchê*.[15] It is, Aristotle thinks, how the body is disposed that explains how the *psuchê* can operate within it. This is because there exists what he calls a commonality (*koinônia*) between the *psuchê* and the body. He explains:

> It is because of their commonality that one acts while the other is affected, and that the one initiates motion and the other is in motion. None of this belongs to things which just happen to be related to each other.[16]

He drives the point home with a dig at the Pythagoreans:

> These accounts merely endeavor to say what sort of thing the *psuchê* is without articulating anything further about the body which is to receive the *psuchê*, as if it were possible, as according

[14] DA I.3 407b15–17, trans. Shields.

[15] From a grammatical point of view, this is a possible translation of the Greek, taking the conjunction *kai*, which Shields translates as 'or,' instead as 'namely.' Thus Aristotle's criticism would read: "without articulating in addition the cause of this, namely, the condition of the body." See Smyth 1956, §2869a for what is often called epexegetical *kai*.

[16] DA I.3 407b17–19, trans. Shields.

> to the Pythagorean myths, for just any *psuchê* to be outfitted in just any body.[17]

This brings us back to our previous discussion of resurrection in Section 2.3. Recall that earlier in DA I.3 Aristotle took it to be a *reductio ad absurdum* of the view that the *psuchê* moves the body in virtue of itself being in motion that it would permit the resurrection of the body. As we saw, he does not really explain why this would be absurd. The *koinônia* discussion is as close as we get to an argument. It seems reasonable to splice the two discussions together. If the *psuchê* is capable of locomotion, then that would seem to make it possible not just for the *psuchê* to reenter the same body (resurrection) but also for it to enter a different one (reincarnation).

Aristotle is very clear about what is going wrong when *koinônia* is neglected:

> For each body seems to have its own peculiar form and shape, and what they [i.e., those who neglect *koinônia,* including the Pythagoreans] say is almost the same as if someone were to say that carpentry were to clothe itself in flutes; for it is necessary that the craft make use of its tools, and that the *psuchê* make use of its body.[18]

Aristotle seems to be using the word 'form' (*eidos*) in a non-technical sense here. He is talking about form in the everyday sense of structure and conformation, rather than in a metaphysical sense that will come into play in DA II.1. His point is that the operations of the *psuchê* are made possible by the specific configuration and organization of the body. Specific psychological functions depend upon engaging appropriate bodily structures, in ways that will be

[17] DA I.3 407b20–23, trans. Shields.
[18] DA I.3 407b23–26, trans. Shields.

illustrated at various points in *De Anima*, particularly in DA II, and in more detail in the *De Motu Animalium* and the *Parva Naturalia*.

It's worth noting an important ambiguity. It is not clear from the text whether Aristotle is talking about the "fit" between *psuchê* and body at the level of the individual or at the level of the species. That is to say, the commonality that Aristotle is emphasizing can be taken to hold either

- between the functions and capacities of each individual *psuchê* and its associated body,

or

- between the functions and capacities common to members of a particular species and the typical bodily configuration of members of that species.

Interestingly, different authors resolve the ambiguity in different ways. Shields seems to take a species interpretation when he writes:

> as the proximate matter of the soul, the body must be suitably sophisticated, by being equipped with suitable organs, because it must be the right kind of tool for the soul (it must be an *organikon* body, in Aristotle's language).[19]

That way of considering the matter would certainly be consistent with Aristotle's considered view, on which (as we shall see in the next chapter) the notion of form, taken in its technical sense, applies primarily at the level of the species.

It is interesting, though, that the earliest surviving commentary on *De Anima*, that of the fourth-century philosopher Themistius,

[19] Shields 2016, p. 134.

lends itself to an individual reading of this passage. Themistius, whose commentary is presented in the form of a paraphrase, writes:

> So, if bodies are the instruments for *psuchai*, each *psuchê* should migrate into the body belonging to it, but not really migrate so much as make the body belong to it and be adapted to it. For [the *psuchê*] molds the body, and does not take it over ready-made, as lyre-playing does the lyre.[20]

The idea of the *psuchê* molding the body is hard to make sense of at the level of the species, particularly when it comes to the biological generation of living organisms. It seems more appropriate for an individual *psuchê* to mold an individual body, just as an individual sculptor molds an individual statue (it is the same word, *prattei*, for the two cases). Themistius's reading is echoed by Thomas Aquinas, who comments, "if there is a body for every *psuchê*, then each *psuchê* will make its way into the proper body—or rather, *psuchê* itself *forms* the body that fits it, and does not take up one already prepared."[21] Both Themistius and Aquinas, then, at least point to the idea that the fit and commonality that Aristotle is discussing is between each individual *psuchê* and its associated body at the level of the individual rather than the species.[22]

In any event, at whichever level the commonality is viewed, Aristotle is plainly putting flesh on the bones of his earlier insistence, discussed in Section 3.1, that any satisfactory account of the *psuchê* must be *enulos*—it must make reference to matter. It is now becoming clearer what form that reference to matter will have to take. It will have to incorporate and explain the complex interactions and interdependences between the operations of the

[20] Themistius, at 24,8.

[21] Aquinas, at p. 71 of Pasnau 1999, although this may be a literal echo, as Aquinas seems to have leaned heavily on a Latin translation of Themistius (by William of Moerbeke, who also produced in the thirteenth century what became the standard Latin translation of *De Anima*).

[22] For further discussion in the context of ways Aristotle thinks about the self, see Bermúdez forthcoming.

psuchê, on the one hand, and the organization and configuration of the body, on the other. Themistius, Aquinas, and Shields all emphasize one direction of *koinonia*, with talk of the *psuchê* molding and forming the body, and the body being the tool of the *psuchê*. But one of Aristotle's great insights in *De Anima* is that the influence goes in both directions. The activities and operations of the *psuchê* are constrained and shaped by the body and how it is configured.

3.3 The *harmonia* theory in Plato's *Phaedo*

The chapter divisions that we now have for *De Anima* would have been news to Aristotle, imposed as they were by later editors. It is easy to think that Aristotle is making a completely fresh start at the beginning of DA I.4, when he turns to the theory that the *psuchê* is an attunement (*harmonia*) of the body. In fact, though, there is a very natural progression from the discussion of the commonality between the *psuchê* and the body at the end of DA I.3 and the discussion of the *harmonia* theory in the first part of DA I.4. Aristotle's critical discussion of the *harmonia* theory further refines his evolving conception of how the body needs to be incorporated in a satisfactory account of the *psuchê*.

There are two further reasons for attending closely to Aristotle's discussion of the doctrine that the *psuchê* is a type of attunement of the body. First, it is widely recognized that, of the accounts discussed in DA I, the *harmonia* theory is the closest to Aristotle's own. Themistius remarked that it is "none too close, nor yet too far, from the truth," where the truth is presumably taken to be Aristotle's account of the *psuchê* at DA II.1. Second, from a more contemporary perspective, the *harmonia* theory has been taken to be the earliest known form of supervenience theory, and Aristotle's treatment of it as a rejection of epiphenomenalism.[23] We will return to both of these issues.

[23] Caston 1997.

The suggestion that the *psuchê* is a type of attunement makes its first appearance in the extant history of philosophy in Plato's *Phaedo*, and it is critically discussed in some of the remaining fragments of Aristotle's lost dialog *Eudemus*. Its provenance and subsequent history have been extensively, though inconclusively, examined.[24] Although the theory that Plato puts into the mouth of Simmias in the *Phaedo* does not exactly map onto Aristotle's discussion in DA I.4, it is definitely worth beginning with that earlier discussion.

The topic is the immortality of the *psuchê* (and, as mentioned in Chapter 1, 'soul' is actually rather plausible as a translation for *psuchê* in the *Phaedo*). Socrates has just given what is generally known as the "affinity argument," emphasizing the affinity between the *psuchê* and its core function of reasoning, on the one hand, and the unchanging, invisible, simple, and immortal world of the Forms, on the other. Simmias, one of his two chief interlocutors in the dialog, then comes up with the following objection:

> Someone might give the same argument with respect to the attunement (*harmonia*) of both the lyre and its strings, namely that the attunement in the tuned lyre is invisible, disembodied, noble, and divine, while the lyre itself and its strings are both corporeal and embodied, as well as composite and earth-like, related to what is mortal. And so therefore, whenever someone either breaks the lyre or cuts its strings, if someone were to put forth the same argument as yours, namely that that attunement would not also be destroyed (for there is no way in which the lyre could still exist with its strings cut through, being as they are of mortal

[24] The doctrine is put forward by Simmias in the *Phaedo* at 85e–86d and then examined at 91c–95a. For commentary see Gallop 1975 at pp. 146–175 and for analysis Taylor 1983. For Aristotle's objections in the *Eudemus*, as preserved by John Philoponus, see F45 in Rose's edition of the fragments (Rose 1886), translated by Barnes and Lawrence in ROT at p. 2402. Shields 2020 explores the relation between the arguments in the *Eudemus* and those in *DA* I.4.

> form, nor for the attunement to be destroyed, perishing earlier than what is mortal, since it is born from and shares a nature with the divine and the immortal), but rather one might say that it is necessary for the attunement to continue to exist somewhere, for the wood and the strings to have rotted away completely before anything happened to it.[25]

What Simmias is offering is, of course, an objection via analogy, rather than account of the *psuchê*, but he goes on immediately to make clear that he actually thinks that the *psuchê* is an attunement of the body:

> For in actual fact, Socrates, I for my part believe that you yourself are well aware that we in particular consider the *psuchê* to be something of this sort and, just as our bodies are stretched taut and held together by the hot and the cold, the dry and the moist and other such things, our *psuchê* is a mixture and an attunement of these very things, whenever they are well balanced and in proportion to each other—and if, therefore, the *psuchê* does indeed turn out to be a sort of attunement, it is clear that, whenever our body is slackened out of measure, or made unduly tight through disease and other misfortunes, the *psuchê* must itself immediately be destroyed, however divine-like it might be, just as occurs with the other types of attunement, those of musical sounds and those in the works of master craftsmen, while at the same time the remains of each individual body persist for a long time, until they either rot or are burned.[26]

These lines from the *Phaedo* are the full extent of the *harmonia* theory prior to Aristotle.[27]

[25] Plato, *Phaedo* 85e2–86a5.
[26] Plato, *Phaedo* 86b5–86d1.
[27] Gottschalk 1971 remains the most comprehensive doxographical discussion. After investigating a number of possible sources, he concludes that the doctrine was most probably made up by Plato for dialectical purposes. Polansky, in contrast, claims that

Simmias gives four very different examples of attunements:

1. the tuning of a musical instrument
2. the balance and proportion of opposite qualities in the body
3. the harmony of musical notes (perhaps in a chord, or in one of the modes)
4. the works of master craftsmen

The variety of examples reflects the complexity of the Greek word *harmonia*, which is something of a false friend. Although *harmonia* transliterates simply enough into the English word 'harmony,' this is potentially misleading. LSJ gives a primary meaning of 'means of joining or fastening.' There are many ways of joining or fastening. The reference in example 4 is to joining in the sense of carpentry, while in example 1 it is to strings being fastened to an instrument such as a lyre. The sense of *harmonia* in example 3 is presumably derived from that in example 1—the strings are fastened in order to secure a certain arrangement of notes. It was a basic principle of ancient Greek medicine that health required a balance between hot and cold, and moist and dry (because imbalances between the qualities affected the humors). 'Attunement' seems to be the best English word available, but even so it is being somewhat stretched (it seems odd to describe the two parts of a mortise-and-tenon joint, for example, as being in attunement).

In all of Simmias's examples, the key ideas seem to be balance, organization, and tension. So, at a very minimum, the basic impetus of the *harmonia* theory is that the *psuchê* is, in some sense,

the doctrine "surely appears prominently in Presocratic thought" (2007, p. 104), citing passages in Heraclitus, Empedocles, and Philolaus. It is far from obvious, though, that any of the passages Polanksky cites actually presents an account of the *psuchê*, although they do make use of *harmonia* and related concepts. For example, there seems little prospect for extracting a theory of the *psuchê* from Heraclitus's famous fragment B51: "They do not understand how, while differing from itself it agrees with itself: a backward turning *harmonia*, like a bow or a lyre." And Philolaus's discussion of *harmonia* appears to have been focused on cosmological matters—see the account in Schluderer 2019.

to be understood as an appropriate balance, organization, and tension holding between the constituents of the body. It is probably pushing the text further than it can stand to try to look for a simple definition of what might count as a constituent of the body for the purposes of attunement. Simmias talks explicitly about the balance of hot and cold, wet and dry, but he also says that those qualities somehow hold the body taut and stretched, which seems most comprehensible in the context of how individual body parts are configured and relate to each other. It is not clear that he (or Plato) clearly distinguished between the various theoretical options available.[28] But still, it is a substantive claim that the *psuchê* is, in some sense, to be understood as an appropriate balance, organization, and tension holding between the constituents of the body, even if the precise constituents are not identified. The natural question to ask is: How is the *psuchê* supposed to relate to an appropriately organized and configured body?

Victor Caston has provided an intriguing answer to this question. He sees the *harmonia* theory in the *Phaedo* as the first appearance in the history of philosophy of what we would now call a supervenience thesis. He explains:

> it [the *harmonia* theory] essentially expresses a supervenience thesis. A given tuning—for example, the Phrygian mode—occurs in an instrument whenever that instrument has been tuned in a particular way: in the case of a lyre, whenever the tension in each string bears certain mathematical ratios to the tension in others. The tuning is not caused by the instrument's physical state, but rather supervenes on it—and in a particularly strong way. Harmonics clearly supports the following sort of counterfactual: if a given lyre were in that physical state, it would be tuned to that mode, as a matter of nature. Tunings, moreover, are multiply

[28] Taylor 1983 is similarly reluctant to try to pin Simmias down. Young 2013 is more optimistic.

> realized. A lyre and a reed instrument can both have the same sort of tuning, even though their physical states are exceedingly different. There should be at least as many physical realizations, in fact, as there are different methods of sound production.[29]

Supervenience is generally understood as a one-way dependence relation that holds between different levels of reality and/or different levels of explanation. As standardly put, if X supervenes on Y then there can be no change in X without a corresponding change in Y, but not vice versa. So, for example, one might think that the temperature of a liquid supervenes on the motion and distribution of its particles, because the temperature of the liquid cannot change unless there is a change in the particles, but not all changes in particle motion and distribution correspond to changes in temperature. Temperature is a higher-level phenomenon than moving particles—and, by the same token, explanations invoking temperature are higher-level explanations than explanations invoking moving particles. Moreover, the one-way nature of the dependence entails that supervenient entities are *multiply realizable*. A given temperature can correspond to many different distributions of moving particles (because what matters is the *mean* molecular kinetic energy).

It is certainly true, in the example Caston considers, that musical tuning qualifies as a one-way dependence relation in precisely the sense just discussed and that it is multiply realizable. But the fact that the tuning of a musical instrument supervenes on the physical constitution of that instrument is not enough to make the *harmonia* theory a supervenience thesis. It seems a stretch to suggest that Simmias, or anyone else at the time, had a conception of one-way dependence relations holding between levels of reality and/or explanation, or of multiple realizability. Even setting that aside, to say that some entity X supervenes on some entity Y is to say

[29] Caston 1997, 322–323.

that there is a lawlike connection between the occurrence of X and the occurrence of Y, where laws are exceptionless and unvarying. But the case has plausibly been made that there is nothing like our contemporary notion of lawlike connection before the Hellenistic period, when discussions of natural necessity emerged in the context of a view of causation very different from that to be found in Plato or Aristotle.[30]

In fact, if we look at how Socrates characterizes the *harmonia* theory when he begins to criticize it, it does seem to be closer to what we would now call an identity thesis (to which supervenience theses are typically presented as alternatives). Socrates asks, for example:

> And what about the following, Simmias, he said. Does it seem to you to pertain to an attunement, or any other kind of compound, to be disposed in any other way than according to the things from which it is composed.[31]

Applying this to the *psuchê*, it could be argued that Socrates takes the *harmonia* theory to have the consequence that the *psuchê* is nothing over and above "the things from which it is composed." On this interpretation, the *harmonia* theory would hold the *psuchê* to be nothing over and above an appropriately organized and functioning body simply because it is to be identified with the organization and configuration of such a body.

[30] For an influential account of the differences between Hellenistic notions of cause and Aristotle's notion of an efficient cause, see Frede 1980. On Aristotle's notion of natural necessity, ch. 4 of Bostock 2006 is instructive. He sees Aristotle's thinking about necessity as focused on what he (Bostock) calls "laws of matter," explained as follows: "The explanation in terms of necessity . . . generally takes the form: when such-and-such matter is already present, in such-and-such conditions, then further matter of a given sort is necessarily produced" (p. 57). A good example is how flesh and bone are produced in the embryo from blood by the operation of heat and cold (see Meteorology at 390b3ff.). This is a long way from our modern notions of causal law and lawlike necessity. See further Section 3.4 below.

[31] Plato, *Phaedo* 92e4–93a2.

3.4 Aristotle on *harmonia*

With the target of Aristotle's discussion more clearly in focus, let's turn to the text of DA I.4, where Aristotle engages with a recognizable descendant of Simmias's theory. The discussion of *harmonia* is one of the longest discussions of an individual theory in DA I, but it is short enough to be quoted in full. Here it is (with labeling to be explained shortly):

> For they say that an attunement is [α] a blending and a compounding of opposites and that the body is composed out of opposites.
>
> [**B1**] And yet an attunement is [β1] a certain proportion of things mixed together, or [β2] a compounding of them, and a *psuchê* can be neither of these. Further, [**B2**] it does not belong to an attunement to initiate motion, but virtually everyone assigns this attribute more than any other to the *psuchê*. Rather [**B3**] it is more in tune with the facts to speak of attunement in the case of health, or bodily virtues in general, than it is in the case of the *psuchê*. [**B4**] This would become most evident if someone tried to ascribe the affections and actions of the *psuchê* to some sort of attunement; for it is difficult to bring these into attunement.
>
> Further, if we may speak of attunement by focusing on its two main varieties, [γ1] one, the most proper, pertains to a compounding of magnitudes, in things with motion and position, and it is a compounding of them when they are tuned so tightly that they admit of nothing of the same kind, [γ2] and then the other to a proportion of the things which are mixed. In neither of these uses is it reasonable to call the *psuchê* an attunement. [**C1**] The first use, where an attunement is a compounding of parts of the body, is exceedingly easy to criticize. For there are many different compoundings of parts and they may be compounded in many

> different ways. Of which part, then, should one suppose that its compounding is reason? Or the perceptual faculty? Or the appetitive faculty? And compounded how? **[C2]** And it would be similarly absurd for the *psuchê* to be the proportion of a mixture. For a mixture of elements does not have the same proportion for flesh and for bone. It will turn out, then, that a thing has many *psuchai*, all over its body, if all of its parts are compounded from the mixed elements, while the proportion of the mixture is an attunement, that is, a *psuchê*.[32]

In the proposed labeling, the Greek letters refer to elucidations of the actual doctrine, while Roman letters refer to Aristotle's objections. The discussion (which is printed continuously in Ross's editions of the Greek text and broken into paragraphs by Shields) has the following form:

> **[α]** An opening general definition of *harmonia*.
>
> **[B1–B4]** Four general arguments (or, more accurately, countervailing considerations) against **[α]**, of which the first, **[B1]**, distinguishes two varieties of *harmonia*, **[β1]** and **[β2].**
>
> **[γ1]** and **[γ2].** A more detailed articulation of the distinction between two varieties of *harmonia*.
>
> **[C1]** An objection to **[γ1]**
>
> **[C2]** An objection to **[γ2]**

The key feature of the structure is that Aristotle's first objection (**B1**) is really a placeholder. It identifies two possible ways of developing the *harmonia* theory (**β1/γ1** and **β2/γ2**). These two forms of

[32] DA I.4 407b30–408a18, trans. Shields.

the theory are separately criticized in **C1** and **C2**, which retrospectively justify Aristotle's dismissive remark in **B1**.

The second of the preliminary objections is the only one that carries any argumentative force. Aristotle simply writes: "Further, [**B2**] it does not belong to an attunement to initiate motion, but virtually everyone assigns this attribute more than any other to the soul." Caston finds in this sentence, and in the discussion of *harmonia* more generally, a rejection of epiphenomenalism and a commitment to downward causation, so that Aristotle is actually making some very substantive metaphysical claims about what it is to initiate motion (as opposed to simply pointing to the phenomenon in very general terms and leaving it, for the moment, unexplained).[33] We should explore this influential suggestion.

To be committed to downward causation is to reject what is often termed the causal sufficiency of the physical. This is the idea that all events (including human thoughts and actions) have sufficient physical causes. This thesis is closely related to the principle of the causal closure of the physical, which holds that the physical world is a closed system.[34] So, we need to ask whether some version of one or both of these can plausibly be taken as Aristotle's target.

Aristotle's insistence on the ineliminability of teleological explanations is very relevant here.[35] It is certainly true that, within the framework of contemporary philosophy of mind, an *Aristotelian* approach to teleology is often taken to be inconsistent with the causal sufficiency principle (although other types of teleological account are explicitly designed to be compatible with it[36]). But that does not really show that *Aristotle* should be credited with rejecting causal sufficiency. In fact, several key features of his

[33] Caston 1997, pp. 326–332. Charlton 1985 also sees this passage as part of a general endorsement of downward causation.

[34] How are they different? The causal closure of the physical, unlike the causal sufficiency principle, allows for there to be non-physical things with non-physical causes.

[35] On which see, *inter alia*, Nussbaum 1978, essay 1; Cooper 1982; Bostock 2006; and Charles 2012.

[36] In, for example, the work of Ruth Millikan.

thought suggest that Aristotle did not think about physical causation in a way that allows the question of causal sufficiency actually to be posed. For example:

1. Aristotle held that causes are simultaneous with their effects, while causal sufficiency is typically framed in terms of antecedent causes necessitating subsequent events.
2. Aristotle did not think of cause and causal laws as coeval notions in the way that is fairly standard today, which makes it hard to formulate a conception of causal necessity or of a closed causal system.
3. It is not clear what would count as the physical, for Aristotle. The subject matter of Aristotelian physics is, of course, the sublunary world, but that includes final causes, forms, and other things extraneous from the perspective of a causal sufficiency thesis.
4. Aristotle's efficient causes have little in common with the "billiard ball" instances of causation that typically underwrite modern notions of causal sufficiency.[37] For one thing, they are typically processes (like a doctor healing) rather than events or states. Moreover, many efficient causes are unmoved movers (like the *psuchê* itself!), which sits uneasily with the modern idea of motion/energy being transmitted along a causal chain.
5. It is not clear that Aristotle had a univocal conception of matter.[38] The planks of the trireme are matter from the perspective of the shipbuilder, but enformed when compared to

[37] See Tuozzo 2014 and Shields 2014, §2.6 for further discussion.

[38] Apart, that is, from the completely featureless prime matter (*proton hulê*) in which he may or may not have believed, but which in any case is by its very nature incapable of featuring in any sort of causal explanation. For the debate on prime matter see, for example, S. Cohen 1984 (*pro*), (the appendix to Charlton 1992 *contra*) and the general discussion of alteration and persistence in S. M. Cohen 2012.

> the tree from which they came (which itself is enformed by the essence of the species tree)—and so on.[39] So what would count as a *purely* material cause?

For all these reasons, then, reading Aristotle's short **B2** remark as a rejection of epiphenomenalism and endorsement of downward causation may be somewhat over-egging the pudding. A simpler account lies ready to hand: Aristotle is pointing out that the *psuchê* cannot be identical to any sort of attunement, because it has a power or capacity that no attunement can have, namely, initiating action. This is not a great argument, because Aristotle gives no reasons for thinking that attunements cannot initiate action (any more than Socrates does in the *Phaedo*). Nonetheless, we can think of it as setting down (or, more accurately, reiterating) a marker for any satisfactory account of the *psuchê*, namely, that it must explain the distinctive way in which the *psuchê* brings about *actions*, which are more than just bodily movements.[40]

Of the other preliminary objections, **B3** and **B4** also turn out to be placeholders. **B3** says that the concept of attunement is more applicable to health and similar bodily excellences, than to the *psuchê*. Perhaps, but it is hard to say, since no reasons are given. Likewise for the charge that the affections of the *psuchê* cannot be attunements. Clearly, if either of these objections are to stick, it will only be because of the arguments coming up in the second half of the discussion (**C1** and **C2**). In order to understand those arguments, however, we need to understand how Aristotle is setting up the *harmonia* theory. It turns out to be an interesting development of the view discussed in the *Phaedo*.

Here is Aristotle's initial characterization again: "And yet an attunement is (**β1**) a certain proportion (*logos*) of things mixed together (*tôn michthentôn*), or (**β2**) a compounding (*sunthesis*) of

[39] For a representative passage, see *Metaphysics* Zeta at 1034b10, where Aristotle observes that the bronze is the matter for the bronze sphere (again!), but could only itself come into being if it itself had both matter and form.

[40] This was constraint (2) from Chapter 2.

them."[41] The key point is that **β1** refers to a mixture, while **β2** refers to a compound, and Aristotle's considered view, developed in many different places, is that mixtures and compounds behave in completely different ways, so that it is in principle impossible for things that are mixed to be compounded.

A mixture (*krasis* or *mixis*) is a homogenous and uniform blend of elements, in which the mixed elements are no longer discernible. Compounds, in contrast, preserve the identity of their components. Salt water is a mixture, but not a compound. Putting gravel into a bag of coffee beans creates a compound, but not a mixture.[42] Since the elements in a mixture dissolve into something homogenous, we can only identify those elements indirectly, through their respective proportions in the mixture. That is why Aristotle typically talks about mixtures in terms of proportions.

This distinction is very important for Aristotle's thinking about the body, because Aristotle thinks that there are two fundamentally different types of bodily part. Some bodily parts are mixtures while others are compounds. This most likely explains why, when he is discussing the thesis that the *psuchê* is a *harmonia*, he feels it necessary to distinguish and refute two different versions of the view.[43]

Mixtures are uniform and homogenous. Aristotle's technical term for this is *homoiomerous* (which comes from *homoios*, similar, and *meros*, part).[44] Something is *homoiomerous* just if the whole and each of its parts are instances of the same kind. As far as (animal) bodies are concerned, flesh and bone are *homoiomerous*, Aristotle thinks—as are the skin, sinews, and so forth. They are mixtures of

[41] DA I.4 407b32–33, trans. Shields.

[42] Relevant texts include *Topics* 112b5ff. and *On Generation and Corruption* at 328a1ff.

[43] This is how the ancient commentators understood the distinction. Themistius at 25,1 clearly distinguishes between two different types of attunement, not two different ways of considering an attunement (Todd 2014 at p. 41). John Philoponus at 148,33 explicitly distinguishes between "combinations of homogenous parts," on the one hand, and "ratios of mixtures of the elements on the level of the homogenous parts," on the other (Eijk 2006, p. 70).

[44] For the general distinction and Aristotle's theory of mixture, see *On Generation and Corruption*. The composition of animal bodies is discussed in *On the Parts of Animals*.

the four elements (more precisely, of the pairs of qualities that define each element, as fire is defined by being hot and dry). Flesh and bone differ from each other in having the elements mixed in a different ratio. Bodies also have parts that are *anhomoiomerous*, that is, with constituent components that are of a different nature from the bodily part itself. The hand, for example, is made up of flesh, bone, skin, and sinews—none of which are hands, and all of which are themselves *homoiomerous*.

With this distinction in view, Aristotle's arguments in **C1** and **C2** start to look much more to the point. Objecting to the idea that the *psuchê* is a compounding of *anhomoiomerous* bodily parts, he observes: "There are many different compoundings of parts and they may be compounded in many different ways. Of which part, then, should one suppose that its compounding is reason? Or the perceptual faculty? Or the appetitive faculty? And compounded how?"[45] Any living organic body is, quite plainly, a compound of *anhomoiomerous* bodily parts, and it would not be living if those parts were not suitably organized as to be in balance with each other. But this is simply a precondition of the *psuchê* being able to perform its functions and operations, not an explanation of how it does perform them. While it seems plausible that being able to perceive requires an appropriate balance and organization of some (as yet unspecified) combination of bodily parts, the simple fact of combination and juxtaposition cannot explain how perception works. Here, and in the case of the other capacities and operations that have *logoi enuloi*, we need a much more substantial and informative account of how they are made possible by the body. Of course, Aristotle in DA I.4 has got a pretty good idea of what such an account is going to look like, but it is probably better to read his argument here as pointing to an explanatory gap, rather than as an implicit attempt to fill it.[46]

[45] DA I.4 408a11–13, trans. Shields.

[46] In this respect, then, the reading offered here is consistent with, but differs in emphasis from, Shields's view that Aristotle rejects the *harmonia* theory for not acknowledging the importance of teleology and final causes (Shields 2020).

Aristotle then, in **C2**, goes on to reject the mixture version of the *harmonia* theory:

> And it would be similarly absurd for the *psuchê* to be the proportion of a mixture. For a mixture of elements does not have the same proportion for flesh and for bone. It will turn out, then, that a thing has many souls, all over its body, if all of its parts are compounded from the mixed elements, while the proportion of the mixture is an attunement, that is, a *psuchê*.[47]

Shields finds the argument unconvincing, observing that it is perfectly consistent with Aristotle's own theory of mixtures to hold that there can be mixture of mixtures (i.e., an attunement of attunements), which he thinks is the obvious move for the *harmonia* theorist to make.[48] This may not be right, however. For the reasons sketched out above, Aristotle cannot accept that *organic bodies* are mixtures of mixtures. All mixtures are homogenous, and organic bodies are not homogenous. This means that organic bodies can only be attunements of mixtures in the compounding way—as attunements of composites of *anhomoiomerous* parts. But that proposal would fall prey to the objections just raised in **C1.**

When they are taken against the background of Aristotle's own theory of mixtures and organic bodies, the arguments against the *harmonia* theory seem more powerful than they are usually given credit for. For present purposes, however, more important are the constraints that emerge from the discussion. As mentioned earlier, the discussion in the first part of DA I.4 reaffirms the importance of constraint (2):

> (2) Any satisfactory account of the *psuchê* must explain the distinctive way in which the *psuchê* brings about *actions*, which are more than just bodily movements.

[47] DA I.4 408a13–18, trans. Shields.
[48] Shields 2020, p. 149.

And the critical discussion of the compounding version of *harmonia* is a further reinforcement and development of constraint (4):

> (4) A satisfactory account of the *psuchê* must explain how the *psuchê* can perform its distinctive functions and operations—and, in particular, the precise sense in which the *psuchê* is the source of perception, thinking, and other psychological states, processes, and operations.

To these we can add a new constraint that emerges from the discussion following the arguments just discussed.

Aristotle observes that the *harmonia* theory has the virtue of explaining some basic facts about the relation between the *psuchê* and the body. In particular, it offers a clear explanation of why the *psuchê* is destroyed when the body is destroyed. Clearly, then, rejecting the *harmonia* theory leaves us with the following constraint:

> (5) A satisfactory account of the *psuchê* must explain why the *psuchê* is destroyed when the body is destroyed.

3.5 Perception, the body, and the elements

As we saw in Chapter 1, a key defining feature of the *psuchê*, according to the *endoxa*, is its capacity for perception, where this is understood very broadly (closer to cognition in general, than to sensory perception in particular). That might seem to be very distant from the *harmonia* theory, but actually they are surprisingly closely related. This is because Aristotle discusses the idea that the *psuchê* is defined by its capacity for perception/cognition through the explanation of that capacity given by Empedocles and others, namely, that perception and cognition can only be explained if the

psuchê is in some sense composed of the elements (because like is perceived by like). And one way to develop this idea is to take composition in the sense of mixture, which takes us right back to the mixture version of the *harmonia* theory.

The discussion in DA I.5 is not primarily interesting for the intrinsic plausibility of the view with which it engages. Aristotle clearly finds the like-from-like principle completely wrong-headed and actually dispatches it quickly and efficiently. But it does serve as a springboard for some wider-ranging discussion that sets up and frames the positive account of the *psuchê* that is coming up in DA II.1.

The explicit target at the beginning of DA I.5 is Empedocles, although the like-from-like principle was certainly held by many others (including Plato in the *Timaeus*). Back in DA I.2 Aristotle had quoted three lines of Empedocles that state the principle in characteristically Empedoclean style:

> For by earth we see earth, by water water
> By aether godlike aether, and yet by fire annihilating fire
> By love love, and strife by sad strife.[49]

According to Empedocles, the basic entities in the world are the four "roots" (*rizômata*), corresponding more or less to what would later be called the four basic elements (*stoicheia*), and the twin organizing principles of love (*philotês*) and strife (*neikos*). Each is known/perceived by what is similar to it. The surviving fragments of Empedocles shed little light on his theory of perception, but there is a lengthy discussion in Theophrastus's *De Sensibus*.[50] According to Theophrastus, Empedocles held that perception

[49] DA I.2 404b13–15, trans. Shields. This is fragment B109 in the Diels Kranz ordering. It also appears in *Metaphysics* Beta at 1000b6.

[50] This is *testimonium* A86 in Diels Kranz. Text and translation in Graham 2010, pp. 400–403.

takes place through effluences of small particles that enter the sense organs through differently sized pores. He gives a sophisticated account of how the sense organs are composed of different roots (with sight being predominantly fire), and their pores are attuned to effluences of different roots from external objects. Unfortunately, Theophrastus is silent on how love is supposed to perceive love or strife strife.

In any event, Aristotle offers a number of sharply critical observations, of which two are prominent. His first line of argument takes us straight back to the *harmonia* theory. Aristotle observes that perception will not result simply from each root/element detecting the presence of its like. Perception is not of the elements *simpliciter*. It is of the things that result from the mixture and combination of the elements. He writes:

> Let it be the case that the *psuchê* knows and perceives those things from which each of these is [i.e., the elements/roots]. Still, by what means will it come to know or perceive the composite, for example, what god is, or what man or flesh or bone is? And it is the same for any other of the compounds. For it is not the elements standing in just any condition which each of these is, but rather their standing in some particular proportion and arrangement.[51]

And so, Aristotle concludes, in order to apply the like-by-like principle properly, Empedocles would need to assume that the *psuchê* is composed not just of the elements, but also of all the different things that can be arrived at by mixing and compounding (which Empedocles showed no signs of distinguishing).

This is actually a rather weak argument. To see why, consider the structure of the human eye (as we understand it, not as Aristotle

[51] DA I.5 409b30–410a2, trans. Shields.

or Empedocles did). The eye contains three different types of cone, popularly known as blue, green, and red because those are the colors to which they are most sensitive. The combination of the cones, and the overlap between the receptive fields, is what makes it possible for us to perceive literally millions of colors. There is no need for us to have yellow cones, for example, because we see yellow when the red and green cones are equally stimulated and the blue cones not at all. By analogy, then, an Empedoclean theory of vision might (to use the example that Aristotle quotes) say that bone is seen when the aether and water pores are equally stimulated, with a combined stimulation equal to that of the fire pores, because Empedocles held, for reasons that are not recorded, that bone is composed of one-quarter aether, one-quarter water, and one-half fire.[52]

Aristotle's second argument is better. It begins by pointing out that there are multiple different types of existent thing (as he frequently remarks, being is spoken of in many ways). Ordinary objects, such as bronze spheres and Socrates, fall into one category (they count as a "this something," a *tode ti*, and so are substances, according at least to the classification in the *Categories*). It is our knowledge of substances that some combination of the element theory and the like-from-like principle have the best chance of explaining, simply because it is substances that are supposed to be constituted from the elements. But what about the other types of thing that exist? How are we supposed to perceive and come to know properties, such as whiteness, or relations such as being-the-brother-of and being-between? This is particularly pressing because, although Aristotle does not put it in quite this way, we typically perceive facts, rather than things—that is, we perceive that Socrates is pale, or that the bronze sphere is between the two statues. There seems to be no way in which facts can be understood in terms of elemental composition, and so no possibility of

[52] This is fragment B96 in Diels Kranz, which Aristotle quotes at 410a4–6.

explaining how we can perceive them through the like-from-like principle and taking the *psuchê* to be composed of elements.

In fact, as emerges from Aristotle's continuing discussion in DA I.5, this whole approach to the *psuchê* seems to be wrong-headed. Perception cannot define the *psuchê* because the realm of things with *psuchê* is far larger than the realm of things that perceive. It is a basic datum for Aristotle that plants, being alive, have *psuchê*. This leads him to a series of reflections on the capacities of the *psuchê*, which are plainly differentially distributed across the animal and plant kingdoms. He will work through this idea in much more detail in DA II and DA III, but for the moment it leads him to raise a question about how the *psuchê* performs its various functions:

> Since knowing belongs to the *psuchê*, as do both perceiving and believing, as do, further, being appetitive and wishing and desires in general, while motion in respect of place comes to be in animals as effected by the *psuchê*, as, further, do growth and maturity and decay, we should ask whether each of these belongs to the *psuchê* in its entirety. That is, is it by the whole *psuchê* that we think and perceive and are moved and both do and experience each of the others, or do we do different things with different parts of the *psuchê*.[53]

As we shall see, Aristotle will eventually develop a position that steers carefully between these two alternatives. For the moment, though, he takes the opportunity to point out that a satisfactory account of the *psuchê* must explain both how it is itself unified and how it serves to unify the body. Considering the (Platonic) hypothesis that the *psuchê* has parts, he writes:

> What, then, holds the *psuchê* together if it naturally has parts? For it is surely not the body; on the contrary, the *psuchê* seems rather

[53] DA I.5 411a26–411b3, trans. Shields.

> to hold the body together. At any rate, when the *psuchê* has departed, the body disintegrates and putrefies.[54]

So, the *psuchê* is a principle of unity for the body. That it must also be its own principle of unity follows, for Aristotle, from a simple regress argument. The passage continues:

> If, then, something else makes the *psuchê* one, that, more than anything else, would be *psuchê*; and then again one will need to inquire whether it is one or many-parted. For if it is one, why will the *psuchê* not be one straightaway? If it has parts, the argument will once again inquire into what it is which holds it together, and thus it will proceed ad infinitum.[55]

This gives us a final constraint to frame the positive account in DA II.1. It is, in effect, the reciprocal of constraint (5), which asked for an explanation of why the *psuchê* is destroyed with the body.

> (6) A satisfactory account of the *psuchê* must explain how it is itself unified and how it serves to unify the body.

* * *

We have reached the end of DA I.5 and Aristotle's subtle discussion of the relation between the *psuchê* and the body is now complete. He has completed his examination of the three defining characteristics identified in DA I.2—motion, incorporeality, and perception/cognition—as well as exploring the *harmonia* theory, which does not fit neatly into any of the endoxic categories. In the process he has offered a plethora of insightful arguments and sketched out a number of important constraints on any satisfactory account of the *psuchê*. The stage is set for his positive account, which will begin

[54] DA I.5 411b6–9, trans. Shields.
[55] DA I.5 411b9–14, trans. Shields.

in DA II.1 and to which we will turn in Chapter 5. First, though, we need to go outside the *De Anima* in order to explore the basic principles of his hylomorphism. This key dimension of Aristotle's thinking, although not far below the surface in DA I, has not been explicitly driving the argument. But it is absolutely front and center in DA II. Aristotle does not articulate and justify his hylomorphic framework in the *De Anima*, and so we will need to look at other parts of the *corpus*, primarily the *Physics* and the *Metaphysics*.

Further reading

Miller 2012 is a thorough discussion of how Aristotle understands different types of separability. Aristotle's primarily discusses separability is his treatment of *nous* in DA III, for which see the references in Chapter 9. On the idea of *logoi enuloi* (matter-involving accounts), see the debate between Charles 2009 and Caston 2009—and then in more detail in Charles's 2021 book. Peramatzis 2014 discusses the role of matter in scientific definitions in Aristotle more generally.

Gottschalk 1971 remains the most authoritative account of the early history of the *harmonia* theory. For a very different approach, discussed in the text, see Caston 1997. The version of the theory discussed in Plato's *Phaedo* is discussed in Taylor 1983, Bostock 1986, and Young 2013. For Aristotle's discussion see Shields 2020, as well as the 1997 article by Caston already mentioned and Charlton 1992.

For more on Aristotle's discussion of Empedocles and the like-by-like principle, see ch. 7 of Carter 2019. Kamtekar 2009 argues that Aristotle and Theophrastus misunderstand Empedocles's theory of perception.

4

A beginner's guide to Aristotle on matter, form, and substance

Focus Texts *Physics* I.7–I.9
Physics II.1–II.3, II.7
Metaphysics Book VIII (Eta)

In contrast to the lengthy literature review and careful analysis in DA I, the second book of *De Anima* begins rather abruptly. Aristotle wastes no time before giving the first of his three, closely connected, accounts of the *psuchê*. Nineteen lines into DA II.1, he writes: "It is necessary, then, that the *psuchê* is a substance as the form of a natural body which has life in potentiality."[1] This brief sentence introduces key Aristotelian concepts, none of which made an appearance (at least, not in their technical sense) in the first book. They are:

- substance [*ousia*]
- form [*eidos*], as contrasted with matter [*hulê*]
- potentiality [*dunamis*], as contrasted with actuality [*entelecheia* or *energeia*]

Since Aristotle is plainly expecting his readers/listeners to be familiar with how these key concepts have been developed elsewhere in his thinking, this chapter provides a guide to Aristotle's thinking about substance, form, and matter through the lens of three key texts: the first book of the *Physics*, the second book of the *Physics*, and the eighth book of the *Metaphysics* (Book Eta).

[1] DA II.1 412a19–21.

Aristotle's De Anima. José Luis Bermúdez, Oxford University Press. © Oxford University Press 2025.
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Before getting started, some brief words of background and scene-setting. The key concept in Aristotle's thinking about things that exist is the concept of substance (*ousia*), which he uses to explore both the sublunary world that we inhabit and the supralunary realm of the planets, the celestial spheres, and the unmoved mover. The Greek word *ousia* is a noun derived from the feminine participle of the verb *einai* (to be). It can be, and has been, translated as 'being' or 'reality' (e.g., in translations of Platonic dialogs), but in Aristotelian contexts it is most often rendered as 'substance' or, more recently, 'substantial being.' All three translations share the dual nature of the Greek word, which functions both as a count term (naming particular things that can be individuated and counted, such as apples and blades of grass) and as a mass term (naming kinds, such as water or heat, that can be measured, but not counted). When *ousia* is functioning as a count term, we can speak of *ousiai* in the plural (substances, beings, realities). When it is functioning as a mass term, on the other hand, we can speak of *ousia* as a kind of "stuff" (substance, being, or reality).

Right from the beginning of his philosophical career, Aristotle emphasizes that substances in the count sense are somehow fundamental features of reality. In the *Categories*, standardly taken to be one of his earliest works (and the first in the Bekker edition), Aristotle identifies what he terms *primary substance* as the most basic type of entity. All other types of entity (properties, relations, quantities, and so forth) exist in, and are predicated of, primary substances. The examples that he gives of these primary substances (in the count sense) are individual living organisms, such as an individual man or an individual horse.

This emphasis on individual living organisms as the most fundamental constituents of the sublunary realm persists throughout Aristotle's writings. There are important changes, though, in how he thinks about substance. The principal development is the emergence and refinement of *hylomorphism*, which is the name usually given to the explanatory framework that he developed using the

twin concepts of matter (*hulê*) and form (*eidos*).[2] This explanatory framework first appears in the *Physics*. In *Physics* Book I Aristotle uses the matter/form distinction to give a general account of change. In *Physics* Book II, the account is further refined in the context of Aristotle's celebrated doctrine of the four "causes" (*aitia*—the reason for the scare quotes will become apparent below). In fact, as we will see, there are significant differences between the hylomorphism of *Physics* I and that of *Physics* II. In many respects, the model in the first book looks back to the primary substances of the *Categories*, while *Physics* II is more representative of what is typically thought of as Aristotle's mature hylomorphism.[3]

Aristotle's most sustained exploration of substance, matter, and form is in the so-called central books of the *Metaphysics*—Books VII (Zeta), VIII (Eta), and IX (Theta). Here he explores *ousia* in the context of a more general inquiry into being *qua* being. These books are notoriously challenging—so much so that one distinguished commentator, twelve years after producing a translation of, and commentary on, books Zeta and Eta, came to the despairing conclusion: "the central books of the *Metaphysics* yield no coherent doctrine at all."[4] Hopefully that judgment is too harsh, because the discussion of substance, matter, and form in the *Metaphysics* is crucial for understanding Aristotle's definition of *psuchê* in the *De Anima*. One of the key moves that Aristotle makes in the *Metaphysics* is to map the matter/form distinction onto the potentiality/actuality distinction, and this mapping is clearly presupposed in the definitions of *psuchê* that he gives in DA II.1.

Our focus texts for exploring Aristotle's thinking about substance, matter, and form include the first two books of the *Physics*.

[2] As we will see further below, Aristotle often (and somewhat misleadingly) connects the notion of form to that of shape (*morphê*), whence the term 'hylomorphism.'

[3] This assumes the truth of some form of the standard view that the primary substances of the *Categories* are not what Aristotle is discussing in the *Metaphysics*. For an intricately argued view to the contrary, see Wedin 2000.

[4] David Bostock, in the preface to his 2006 collection of essays. His commentary is Bostock 1994.

These need no particular justification, but it is worth saying something about the choice of *Metaphysics* Eta. The three central books of the *Metaphysics* present a continuous discussion of substance, matter, and form. Why focus on Eta, the middle of the three books? The first reason is simple. Its predecessor, Book Zeta, is notoriously impenetrable. This is due both to the complexity of the discussion and to textual issues. Some sections of Zeta appear to have been written later than others (although nobody has suggested that they were not written by Aristotle), and the argumentative structure is very hard to make out.[5] Eta is far from straightforward, but it is less complex by an order of magnitude. Moreover, and even more importantly, it is in Eta that Aristotle first explicitly and systematically connects the matter/form distinction with the potentiality/actuality distinction, which does not appear in Zeta. There is an extended discussion of actuality/potentiality in the next book, Theta, but there is relatively little discussion there of substance, and so it is not as directly helpful for *De Anima*. As we shall see, one very interesting feature of the discussion in Eta is that Aristotle brings in the notions of actuality and potentiality to solve interesting and important problems about the unity of matter and form that are very relevant to some of the puzzles and constraints left hanging at the end of DA I.

4.1 Matter and form in *Physics* I

Aristotle's *Physics* is not a work in what we would now call physics. Its subject matter is *phusis*, which for the Greeks in general is simply nature, and for Aristotle in particular is the sublunary natural realm, the realm of things and organisms that move and change. Many of the Presocratics wrote, or had credited to them, works with

[5] For a book-length study just of the structure of Zeta, see Burnyeat 2001. For a lengthy analysis of Burnyeat's map, see Menn 2011.

titles such as *Ta Phusika*, and they were often referred to (not least by Aristotle himself) as *phusiologoi* or *phusikoi*. Accordingly, the first book of the *Physics*, like its counterparts in *De Anima* and the *Metaphysics*, examines the relevant doctrines of his predecessors in some depth.

It is important to recognize, though, that Aristotle takes a very different approach from earlier students of nature. Democritus, for example, treated the study of nature as what might (anachronistically) be termed a *first-order* activity. That is to say, he made direct proposals about the atomistic structure of the physical world, with concrete suggestions as to how to explain particular physical phenomena in terms of the movement of atoms. In this respect, Democritus was engaged in (a perhaps more sophisticated version of) the same activity as the Milesians Anaximander and Anaximenes. But one of Aristotle's chief complaints against the theories of his predecessors was, in effect, that they approached the study of nature with, and were subsequently led astray by, an impoverished set of conceptual and explanatory tools. This is one reason why Aristotle's *Physics* is not really a work in the first-order study of nature at all. Rather, it is more of a *second-order* enterprise, devoted to developing a better conceptual and explanatory framework for studying the sublunary world.[6] Instead of offering a theory of the ultimate structure of the physical world, the eight books of the *Physics* discuss very general notions, such as causation, explanation, and the infinite.

One of the key sources of confusion that Aristotle identified in earlier natural philosophers had to do with the concept of coming-to-be (or simply: becoming, as in *The Revised Oxford Translation*).

[6] Aristotle did, of course, engage in the first-order study of nature, particularly in biological works such as *Parts of Animals* and *Movement of Animals*. For a short overview of Aristotle's biological writings, see Lennox 2012. There is a rich literature exploring the relation between Aristotle's scientific writings and his more theoretical and methodological writings. See, for example, the essays in Gotthelf and Lennox 1987, and Lennox's book-length discussion in his 2021.

The Greek word thus translated is *genesis*, which is the noun corresponding to the verb *gignesthai* (to become, or: to come-to-be). One interesting, and potentially confusing, feature of how *gignesthai* works in Greek is that it refers to two very different phenomena. On the one hand, it is possible for something to come-to-be (*gignetai*) something else (as when Socrates becomes musical, to take one of Aristotle's favorite examples). Alternatively, the same word is used when something comes into existence. In fact, the original sense of *gignesthai* is likely to have been: to be born.[7] In English, the first type of coming-to-be might be termed 'change' or 'alteration' (although these are both somewhat technically charged in an Aristotelian context), while the second could be 'genesis.' Aristotle himself picks out the second, absolute sense of *gignesthai* as *haplôs*, which means 'simply' or 'absolutely' (*simpliciter* in Latin and philosophical English).

The most celebrated analysis of coming-to-be among the Presocratic philosophers was that of Parmenides, who famously denied that anything could come-to-be in either sense of *gignesthai*. The shadow of Parmenides looms large over *Physics* I, and the principal task that Aristotle sets himself in this book is clarifying the process of coming-to-be. It is helpful to view the dialectical context here as set by the two principal lines of argument that Parmenides uses against the possibility of anything coming-to-be. Simplifying somewhat, Parmenides argues via a dilemma. If anything is to come-to-be, it must do so either from what is or from what is not. But something cannot come-to-be from what is—how could it, since it would already be? But nor could something come-to-be from what is not, because nothing can come-to-be *ex nihilo*.[8]

[7] See Chantraine 1968, p. 221.

[8] Interestingly, Parmenides's argument for this horn of the dilemma appears to have involved an early use of a form of the principle of sufficient reason. Something cannot come-to-be out of nothing because there would be no reason for it to come-to-be at one time rather than another. See lines 9–10 of fragment B8. For a comprehensive discussion of Aristotle on Parmenides, see Clark 2019.

With this Parmenidean line of argument in the background, Aristotle offers in *Physics* I.7–9 a model of coming-to-be that has two key, anti-Parmenidean features. First, it holds that there is something persisting through the process of coming-to-be (thereby explaining how what comes-to-be can come-to-be out of what is). This is what Aristotle calls the underlying thing (*to hupokeimenon*). Second, Aristotle explains, *contra* Parmenides, that there is indeed a sense in which what comes-to-be comes-to-be from what is not. This is because, in coming-to-be, something goes from lacking some property F to possessing F. In other words, it comes-to-be out of a lack (out of nothing, in a sense, but not out of nothing *simpliciter*).

The key elements of Aristotle's account come in *Physics* I.7. This chapter is a paradigm example of Aristotle at work, with careful analysis informed by sharply drawn distinctions. The first distinction that he draws is between simple and complex things. Simple things include Socrates and the property of being musical, while musical Socrates is a complex thing. At the beginning of the chapter, when this distinction first appears, it seems rather pointless, and also to cut against Aristotle's standard way of organizing the contents of the world. Socrates and the property of being musical are items in distinct ontological categories. In the *Categories*, and elsewhere, Aristotle makes a sharp distinction between what he calls (primary) substances (*ousiai*), on the one hand, and items that are attributed to, and in some sense exist in, substances.[9] These derivative types of thing fall into several different categories (nine in the *Categories*). Socrates is a canonical example of a substance, which Aristotle tends to think of in his early writings as living organisms. Musicality, and non-musicality, on the other hand, fall

[9] In the Categories, the primary substances are distinguished from secondary substances, which are species and genera. Socrates is a primary substance. Humankind is a secondary substance. The language of primary and secondary substances disappears after the *Categories*.

under the category of quality. It seems distinctly odd, therefore, for him to lump musicality and Socrates together.

Aristotle does have a reason, though, and it is key to understanding how matter and form come into the picture. To see why, we need to start with the (relatively) easy case. This is the case where one thing comes to be something else, as when Socrates becomes musical. The key feature of this case, of course, is that there is something that persists throughout the process of change, namely Socrates, who is a simple thing. What happens to Socrates when he becomes musical is that one simple thing (the absence of musicality) is replaced by another (musicality). Here is how Aristotle characterizes what is going on:

> These distinctions drawn, one can gather from surveying the various cases of becoming in the way we are describing that there must always be an underlying something, namely that which becomes, and that this, though always one numerically, in form at least is not one. (By 'in form' I mean the same as 'in account.') For to be a man is not the same as to be unmusical. One part survives, the other does not: what is not an opposite survives (for the man survives), but non-musical or unmusical does not survive, nor does the compound of the two, namely, the unmusical man.[10]

According to the basic model, then, in the non-absolute sense of coming-to-be, there is an underlying thing (*hupokeimenon*) that is simple and persists through change. This is what Aristotle calls a substance.

Aristotle then turns to coming-to-be *simpliciter* (or, as we might put it, coming-into-existence). He begins by stating that, strictly speaking, only substances can come-to-be in the unqualified sense. All other things (properties, relations, and so forth) depend upon some substance or other for their existence, and so they

[10] *Physics* I.7 190a13–21, trans. R. P. Hardie and R. K. Gaye in ROT.

come-into-being only to the extent that a substance changes or is altered.

Now Aristotle makes his fundamental move. Ultimately, the two senses of *gignesthai* collapse into one, because coming-to-be *simpliciter* is really a special case of one thing coming-to-be something else. This is because, he argues, in every case of coming-to-be simpliciter there is an underlying thing. He gives a number of examples:

> But that substances too, and everything else that can be said to be without qualification, come to be from some underlying thing, will appear on examination. For we find in every case something that underlies from which proceeds that which comes to be; for instance, animals and plants from seed. Things which come to be without qualification, come to be in different ways: by change of shape, as a statue; by addition, as things which grow; by taking away, as the Hermes from the stone; by putting together, as a house; by alteration, as things which turn in respect of their matter.[11]

This passage reveals a classic equivocation between natural substances (living organisms) and artifacts. But setting that aside, Aristotle does indicate two different forms of underlying thing in the case of natural substances—the seed from which it initially develops, and then some intermediate material (presumably he is thinking of cases like an embryo growing *in utero*).

What this means, of course, is that Aristotle now has to abandon his earlier insistence that individual substances are simple. They must be complex. When considered as the underlying subject of

[11] *Physics* I.7 190b1–9, trans. R. P. Hardie and R. K. Gaye in ROT. The last example may seem baffling. The Greek verb translated as 'turn' is *alloiôsein*, which could also be translated as 'change' or 'change qualitatively.' He may be referring here to the doctrine that the basic elements (air, fire, water, and earth) can be transmuted into one another—or perhaps to cases such as a butterfly emerging from a caterpillar.

change, Socrates is simple. But Socrates himself is something that has come-to-be in the unqualified sense. Since there must be an underlying thing for unqualified coming-to-be, it follows that there must be an underlying thing in Socrates himself. This is what Aristotle calls matter (*hulê*). Here is how he puts the point in two important passages. Here is the first:

> Now the subject is one numerically, though it is two in form. (For there is the man, and the gold—in general, the countable matter; for it is more of the nature of a 'this,' and what comes to be does not come from it accidentally; the privation, on the other hand, and the contrariety *are* accidental.) And the form is one—the order, the art of music, or any similar predicate.[12]

The second comes toward the end of I.7:

> The underlying nature can be known by analogy. For as the bronze is to the statue, the wood to the bed, or the matter and the formless before receiving form to any thing which has form, so is the underlying nature to substance, i.e. the 'this' or existent.[13]

These two passages make clear that, while Aristotle is clearly introducing a version of the matter-form distinction, he is still groping his way toward a clear conception of matter. In the first passage, he talks about 'countable matter' in a way that seems to assimilate matter to individual substances. He also says that matter is a 'this,' while his considered view is that matter cannot be so described because only determinate things can be a 'this.' In contrast, the second passage clearly distinguishes between matter and individual substance, between the matter of Socrates and the man himself.

[12] *Physics* I.7 190b23–29, trans. R. P. Hardie and R. K. Gaye in ROT.
[13] *Physics* I.7 191a7–12, trans. R. P. Hardie and R. K. Gaye in ROT.

Nor has Aristotle fully arrived as his mature notion of form. When he writes that the form is "the order, the art of music, or any similar predicate," he seems to be proposing a very broad notion. In fact, the notion may be so broad as to be unworkable. The form of a thing seems to include everything that can be said to order or structure matter—and so, pretty much any respect in which the underlying thing changes. This includes (as he explicitly affirms at 190a34) any change with respect to any of the non-substance categories.

In sum, while *Physics* I.7 can properly be said to *introduce* the distinction between matter and form as part of an account of coming-to-be, it does not really put forward a fully coherent doctrine. Fortunately, a more developed account of matter and form emerges in the early chapters of *Physics* II, to which we now turn.

4.2 Matter, form and explanation in *Physics* II.1 and II.2

The first chapter of *Physics* II is occupied with explaining how Aristotle understands nature (i.e., *phusis*, the subject-matter of Aristotelean physics). His answer is deceptively simple. Nature is composed of the things that exist *by nature*. Things exist by nature just when they have a principle of movement and generation within themselves—unlike artifacts, for example, for which the principle of production is external to them (in the sculptor or the builder, for example). The things that exist by nature are exactly the substances (*ousiai*). So, it turns out that the study of nature is in effect the study of individual substances.

But, Aristotle asks, how should we study individual substances, and hence nature as a whole? He identifies two different approaches. One focuses on matter, and the other on form. The Milesian *phusiologoi* took the first approach, trying to understand nature in terms of particular elements (air for Anaximenes, for

example) or the unlimited *apeiron* (Anaximander). The atomists also fall under this heading, offering a model of nature in terms of the shape and movement of particles. Aristotle summarizes the conception of nature that underlies this general approach: "This then is one account of nature, namely that it is the primary underlying matter of things which have in themselves a principle of motion or change."[14] This conception of matter picks up on one strand of the discussion in *Physics* I, where he also talks about matter as "underlying" (*hupokeimenon*).

After discussing the matter-focused approach to the study of nature, Aristotle introduces an alternative approach: "Another account is that nature is the shape or form which is specified in the definition of a thing (*kata ton logon*)."[15] Here the notion of form is developed very differently from how it was introduced in the previous book, where Aristotle was working with a very general notion of form more or less equivalent to any respect in which an object changes. Now Aristotle ties form very closely to definition (*logos*, in one of its senses). He also in *Physics* II.1 makes a move that will become much more central in the *Metaphysics*, which is to connect the matter/form distinction to the actuality/potentiality distinction. This in turn sheds more light on what he means by definition. He writes: "What is potentially flesh and bone has not yet its own nature, and does not exist by nature, until it receives the form specified in the definition, which we name in defining what flesh or bone is."[16]

Setting aside the fact that flesh and bone do not count as individual substances according to the account he is developing, Aristotle is suggesting that we should think of an individual substance's matter as its potential for being and/or developing into a certain kind of thing, as specified by its definition. Once

[14] *Physics* II.1 193a28–30, trans. R. P. Hardie and R. K. Gaye in ROT.
[15] *Physics* II.1 193a30–31, trans. R. P. Hardie and R. K. Gaye in ROT.
[16] *Physics* II.1 193a36–b3, trans. R. P. Hardie and R. K. Gaye in ROT.

an individual substance has become that kind of thing, Aristotle maintains that it exists in actuality, rather than potentially. It is fair to say that the potentiality/actuality dimension of the matter/form distinction is not really foregrounded in the *Physics*. It is much more carefully developed in *Metaphysics* Eta, and so we will return to it at greater length in the next section.

In the next chapter, *Physics* II.2, Aristotle further specifies what he means by form by connecting it to the notion of essence, posing the question: "How far then must the student of nature know the form (*eidos*) or essence (*to ti estin*)?"[17] Aristotle's idea seems to be that what a definition specifies is the essence of a thing. So, definition and essence are reciprocal concepts, and definition functions as a middle term, as it were, connecting form and essence.[18]

What emerges in a somewhat haphazard manner from the first two chapters of *Physics* II is a cluster of four concepts that are closely related and interdependent, but definitely not synonymous. These are set out in Figure 4.1.

Here, roughly, is how they fit together. Everything that exists by nature has a form, which is the essence of that thing. That essence is spelled out in its definition, and, when the individual thing fully manifests that essence, then it is properly said to exist in actuality.

With the concepts of form, essence, definition, and actuality connected in this way, we have come a long way from the much simpler picture of matter and form that emerged from the discussion of change in *Physics* I. Aristotle extends and develops the picture still further in *Physics* II.3 and II.7, in the context of a more general discussion of explanation and the character and focus of the study of nature.

[17] *Physics* II.2 194b9–10, trans. R. P. Hardie and R. K. Gaye in ROT. Aristotle is here using another of the expressions standardly translated as 'essence,' *to ti esti* (literally: the what-it-is). The word "or" here translates the Greek word *kai*, more typically translated as "and." We should think of this, the translator is most likely suggesting, as an instance of the so-called epexegetical *kai*, whereby 'and' shades into 'namely.' See Smyth 1956, § 2869a.

[18] On the connection between essence and definition, see Charles 2010.

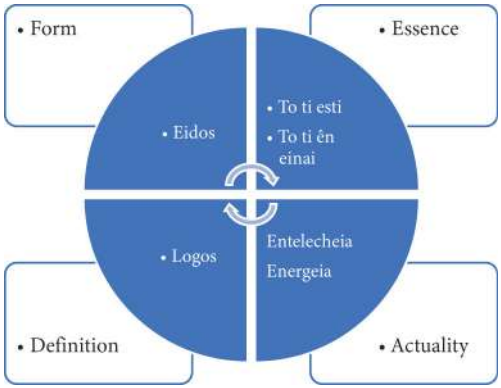

Figure 4.1 The key dimensions of Aristotle's thinking about form as set out in *Physics* II.1 and II.2.

4.3 Matter, form, and the four *aitia* in *Physics* II.3 and II.7

Aristotle's preoccupation in *Physics* II.2 remains the general question of whether the student of nature should focus on matter, on form, or in some sense on both. He does not explicitly give an illustration of what a form-focused approach to nature would look like, but he makes clear what he means with reference to mathematics.

Aristotle thinks that mathematics is basically an activity of abstraction, as we saw earlier, in the context of his remarks on definition and the separability of the *psuchê* in *DA* I.1.[19] Mathematical objects (points, lines, numbers, and so on) cannot exist independently of their instantiation in physical objects. He does not accept the existence of mathematical abstract objects, any more than he accepts the existence of Platonic forms. But still, mathematicians

[19] See Section 3.1 above.

do not study actual, physical points or lines as they exist in the natural world. They study, in effect, idealized abstractions, independent of what would be their actual material instantiation. So, Aristotle poses the obvious questions. Is the student of nature like the mathematician? Should the study of nature focus just on form, abstracting away from matter?

Aristotle's basic answer in *Physics* II.2 is: No. He thinks that focusing on form to the exclusion of matter is no more promising than focusing on matter to the exclusion of form. He initially makes the point with one of his favorite examples, to which he returns many times in the *Metaphysics* as well as twice in *De Anima*. This is the example of the snub (*to simon*), which refers to the fabled snubness of Socrates's nose, rather than to any sort of personal slight. Here is the key passage from II.2: "Since two sorts of thing are called nature, the form and the matter, we must investigate its objects as we would the essence of snubness, that is neither independently of matter nor in terms of matter only."[20] A snub nose, Aristotle emphasizes, is a nose that has a concave shape (it turns up at the end). If we try to abstract the form of snubness away from the matter, then all we are left with is the concept of concavity, which is a mathematical notion and clearly distinct from the concept of snubness. If we focus just on the matter, then all we get is either the nose or flesh and bone, neither of which helps us to understand Socrates's signature feature. Snubness, then, is concavity-in-the-nose.

The analogy with snubness and the general idea that nature needs to be studied with respect to both matter and form are both tolerably clear, but can hardly be said to provide much concrete guidance. Fortunately, this comes in the very next chapter, *Physics* II.3, which is probably the most studied chapter in Aristotle's *Physics*. There Aristotle sets out a model of explanation that both provides a blueprint for the student of nature and greatly clarifies the explanatory role of matter and form.

[20] *Physics* II.2 194a13–15, trans. R. P. Hardie and R. K. Gaye in ROT.

The doctrine that he lays down in II.3 (much of which is reproduced almost verbatim in chapter 2 of *Metaphysics* Delta) is typically referred to as the doctrine of the four causes. Some care is needed here, however. When we looked at the *harmonia* theory, we saw some respects in which Aristotle's notion of a cause differs from the modern one (e.g., his assumption that causes are simultaneous with their effects). The differences become even more palpable here. The word that Aristotle most often uses in this context is *to aition* (plural: *ta aitia*), although he also uses the noun *hê aitia* (plural: *hai aitiai*), which is actually rather more common in Greek.[21] Both *aition* and *aitia* are part of a cluster of words whose core meaning has to do with responsibility and culpability. They apply to people just as much as to things. Legal processes are occupied with them—to be held guilty, for example, is to have *aitia*.[22] Reasons for action are also *aitiai*. So, the connotations of *aition and aitia* are far broader than the English word "cause." It is important also to recognize that Aristotle typically elides the modern distinction between causes and causal explanation. An *aition*/*aitia* can be either a thing in the world, or a way of talking or thinking about that thing.

Here is how Aristotle characterizes the subject-matter of *Physics* II.3:

> Knowledge is the object of our inquiry, and men do not think that they have grasped a thing until they have grasped the 'why' of it (which is to grasp its primary cause). So clearly we must do this as regards both coming-to-be and passing away and every kind of

[21] Confusingly, the nominative singular of *aitia* and nominative plural of *aition* are spelled the same. There is no ambiguity in Greek, however, as the accents and pronunciation are different. Those curious as to whether Aristotle uses *aition and aitia* in different senses are referred to Casals and Reynes 1995, which considers the question in the context of the *Metaphysics*.

[22] See the entry on *aitia* in LSJ at I.1 for a range of legal meanings.

> natural change, in order that, knowing their principles, we may try to refer to these principles each of their problems.[23]

This passage makes very clear that Aristotle is discussing the different ways in which one can ask and answer the question of *why* something is the way that it is. Since 'because' is the standard answer to 'why,' a better label for the doctrine proposed in *Physics* II.3 might be 'the four because.' This was actually the title of a helpful article by Max Hocutt in 1974, but the label does not appear to have caught on.[24]

In any event, Aristotle identifies four different ways of answering a why-question, and hence four different ways of having knowledge of a thing. Here they are (with the standard names, which Aristotle does not himself use, in square brackets):

> *With respect to its matter* [the material *aition*]
> Aristotle describes this as "that out of which a thing comes to be and which persists."[25] The examples he gives are from artifacts—the bronze of the statue and the silver of the bowl. He also mentions the relation in which the genus (e.g., animal) stands to the species (e.g., human being).

> *With respect to its form* [the formal *aition*]
> Here Aristotle repeats the moves that we have just traced in *Physics* II.2 (but without mentioning actuality). He refers to "the form, or the archetype (*paradeigma*), i.e. the definition of the essence."[26] The examples he gives emphasize the functional/organizational dimension of form. So, for example, he describes the

[23] *Physics* II.3 194b17–23, trans. R. P. Hardie and R. K. Gaye in ROT.
[24] Hocutt 1974. For a range of perspectives on Aristotle's thinking in this area, see Moravcsik 1995, Henning 2009, and Stein 2011, as well as the discussion at pp. 98–104 and 111–120 of Charlton's translation and commentary on *Physics* I and II (Charlton 1992).
[25] 194b24, trans. R. P. Hardie and R. K. Gaye in ROT.
[26] 194b26–7, trans. R. P. Hardie and R. K. Gaye in ROT.

form of the octave as being the ratio 2:1 (because the top note of the octave is double the frequency of the bottom note).

With respect to its source of movement [the efficient *aition*]
Aristotle describes this as "the primary source (*archê*) of the change or rest."[27] He gives two examples. The father is the *archê* of the child, while the deliberating person is the *archê* of the action performed.

With respect to its goal [the final *aition*]
The key word here is *to telos*, which is the goal or end for which something is done—what Aristotle often refers to as 'that for the sake of which' (*to hou heneka*). Aristotle gives one of his favorite examples: walking is for the sake of health.

From the perspective of understanding how the matter/form distinction is supposed to function for Aristotle, this classification raises an obvious question, because we now have four factors where previously we had two. The material aition remains constant, but how do the final *aition* and the efficient *aition* relate to the formal *aition*?

In *Physics* II.3 Aristotle makes some suggestive remarks. He observes, for example, that the final and efficient *aitia* can sometimes be two sides of the same coin. Hard work causes fitness in the efficient sense, while fitness causes hard work in the sense that it is its goal. But it is in *Physics* II.7 that we find a much more worked-out answer to our question. Aristotle writes:

> Now, the causes of nature being four, it is the business of the student of nature to know about them all, and if he refers his problems back to all of then, he will assign the 'why' in the way proper to his science—the matter, the form, the mover, that for

[27] 194b29–30, trans. R. P. Hardie and R. K. Gaye in ROT.

> the sake of which. The last three often coincide; for the what [*ti esti*—i.e., the essence] and that for the sake of which are one, while the primary source of motion is the same in species such as these. For man generates man—and so too in general with all things which cause movement by being themselves moved, and such as are not of this kind are no longer inside the province of natural science.[28]

This passage is a little difficult to parse. Aristotle does seem unequivocally to equate the formal and final *aitia*, since he refers to essence (*ti esti*) and form more or less interchangeably in *Physics* II.2. But it not clear how to understand the claim that form/essence and primary source of motion "often coincide." David Bostock takes the view that the triple coincidence is intended to apply to all living things.[29] This may be right, and in *De Anima* II.4 Aristotle certainly suggests that the *psuchê* is an *aition* of the body in all three senses.[30] Aristotle's actual example here is narrowly biological—man generating man. But the same point may hold when the efficient *aition* is considered more broadly. The deliberating general who launches an attack is plainly an efficient *aition*, by Aristotle's lights. And the question of why the attack took place will appeal to the essence of generalship, which is presumably a set of skills defined in terms of their end, namely, military victory.[31]

For our purposes, though, it is the equation of form/essence and goal/end (*telos*) that is important, because it points to the fundamental importance of teleology in Aristotle's thinking about form and essence. One of the key points here that we have not yet touched upon is that Aristotle's notion of form is primarily a

[28] *Physics* II.7 198a21–28, trans. R. P. Hardie and R. K. Gaye in ROT.
[29] Bostock 2006, p. 84.
[30] DA II.4 415b8–12.
[31] Thanks here to Mariska Leunissen.

notion of species-form.[32] It is the species that has a form, not the individuals within the species. The form of Socrates is the essence of what it is to be a human being. It is not in any sense peculiar to Socrates. In fact, Aristotle uses the same word, *eidos*, for both form and species.[33] Appreciating that the related notions of form, essence, and account/definition (*logos*) are all situated at the level of the species makes it much easier to see how Aristotle's thinking about form is fundamentally teleological.

This is not the place to try to do justice to the full scope of Aristotle's thinking about teleology. In the context of *De Anima* we need only consider how teleological explanation is supposed to work in living organisms (and their parts). The following is offered as a hopefully uncontroversial summary of some of the central points in his thinking in this area.[34]

(1) All living organisms have characteristic activities and characteristic functions, which can be defined and understood at the level of the species and define a notion of the good for each living organism, as well as an endpoint for the development of the individual.

[32] There are a few passages, particularly in the *Metaphysics*, that seem to suggest otherwise. Michael Frede, in fact, has argued that Aristotle's forms have to be particular, although he does not think that the form of Socrates differs in any qualitative way from the form of, say, Callias. See Frede 1987a, where he originally proposed the interpretation subsequently developed in his edition of the *Metaphysics* with Günther Patzig. For discussion see Woods 1991. From a very different perspective, Balme has argued that form and species are not identified in Aristotle's biological writings, in the context of an intriguing argument that Aristotle is not an essentialist. See Balme 1980. More generally, in Aristotle's biological writings, his approach to heredity often leads him to emphasize the individual over the species. See, for example, Henry 2006, Connell 2021, and (in the context of Aristotelian notions of the self) Bermúdez forthcoming.

[33] This is discussed in Woods 1993, which rejects any charge of ambiguity.

[34] For a very clear statement of Aristotle's teleological approach to the study of nature, see the first chapter of *Parts of Animals* I. Charles 2012 and ch. 4 of Bostock 2006 are helpful introductions to the extensive literature on Aristotle's teleology, highlights of which include Nussbaum 1978, essay 1; Cooper 1982; Gotthelf 1987; Johnson 2005; and Leunissen 2010.

(2) We cannot understand a living organism without understanding the good for that organism.
(3) We cannot understand the good of a living organism without understanding the endpoint of its development.
(4) The structure and parts of a living organism also have their own characteristic activities and functions, which are typically subordinate to the activities and functions of the whole organism. They promote the good for the organism.
(5) We cannot properly understand an organism's structure and parts without understanding how their operation allows them to perform their own functions and contribute to the good for the organism.
(6) We cannot understand how the structure and parts of an organism develop without taking into account the endpoint of that development and how it contributes to the development of the organism.

It should hopefully now be easier to see how and why Aristotle consistently equates the formal and final *aitia*. The form of an individual substance is its essence, namely, what makes it the thing that it is. That individual substance is the thing that it is in virtue of the species of which it is a member. So, the form of the individual is the essence of the species. But, any account (*logos*) of the essence of the species needs to explain what the good is for members of that species and how they typically develop.[35]

With this we have now covered the relations between three of the four key notions depicted in Figure 4.1. We can see how form, essence, and account/definition are connected through the role of teleology. We have not yet explored how the notion of actuality fits in. This is not really discussed in depth in the *Physics*. So, we turn now to Book Eta of the *Metaphysics*.

[35] For further discussion of these and related issues see Witt 1989, particularly at pp. 79–100

4.4 Actuality and potentiality in *Metaphysics* Eta

Someone who reads *Metaphysics* Eta after the first two books of the *Physics* will encounter some familiar themes. So, for example, the idea of substance as what underlies is prominent in chapters 1 and 2. The four *aitia* make an appearance in chapter 4, where Aristotle again proposes the coincidence of formal and final *aitia*. The idea of form as the essence of a species runs through the entire book. At the same time, though, there are some new preoccupations, reflecting an orientation that is more theoretical and much less focused on the study of nature. Chief among these is a concern with what might be termed the problem of unity. This problem had made an appearance in the previous book, Zeta, but was not, it is probably fair to say, fully resolved there.[36] Aristotle's solution to the problem of unity in Eta 6 rests squarely upon applying the conceptual framework of potentiality and actuality to the matter/form distinction. Studying that solution reveals the fundamental connection between form and actuality in Aristotle's thinking.

The first statement in Eta of the problem of unity comes at Eta 3, where Aristotle considers the question of what makes a syllable a syllable and a house a house. This is a question that has two dimensions. On the one hand he is talking about the objects themselves, syllables and houses. But at the same time, he is talking about the definitions of syllable and house. And this dual structure is exactly what one would expect, given that what makes something a house is the essence of being a house, which is what is specified in the definition of a house.

[36] The most sustained discussion is in Zeta 12, which, to complicate matters further, has plausibly been argued to be a later addition to the text of Zeta (although from Aristotle's own hand). See Bostock's commentary (Bostock 1994) at pp. 176–177 and the extensive discussion in Burnyeat's map of Zeta (Burnyeat 2001). The topic is also discussed in Zeta 17. See Devereux 2003 for a general discussion of the relationship between Zeta and Eta. Gill 2010 is helpful on the relation between Zeta 12 and Eta 6, and Code 2010 on the specifics of the argument of Zeta 12.

The obvious answer is that a house is a set of materials (bricks, stones, wood, etc.) organized in a certain way, while a syllable is a set of letters organized a certain way (we would probably nowadays talk about phonemes, and this may have been what Aristotle meant). But then this raises another question. How should we understand the relation between the materials/letters and the organization? Aristotle is very clear about ruling out one possible answer:

> If we consider we find that the syllable is not produced by the letters and juxtaposition, nor is the house bricks and juxtaposition (*sunthesis*). And this is right; for the juxtaposition or mixing is not produced by those things of which it is the juxtaposition or mixing . . . Nor is man animal and biped, but there must be something besides these, if these are matter, – something which is neither an element in the whole nor produced by an element, but is the substance, which people eliminate and state the matter.[37]

In these remarks, which probably refer back to Zeta 17, Aristotle clearly affirms that we should think of the organization in a fundamentally different way from how we think about the elements that are organized. We cannot think of a house as being composed of bricks, wood, and stone + a certain organization, in the way that we might think of bronze as an alloy of copper + tin. Simply providing a list of materials and a set of blueprints would not provide an adequate account of what a house is. The blueprints describe how the materials are to be put together, but that alone is not enough—we also need to understand the reasoning and purpose behind the materials being put together in precisely that way.

In the second part of the quoted passage, Aristotle extends this line of thought to the standard definition of human beings, where this is given by specifying a genus and differentia. The basic idea is to start with a genus (animal) and then successively divide it

[37] *Metaphysics* Eta 3 1043b4–13, trans. W. D. Ross in ROT.

through identifying differentiating features until one eventually reaches individual species. The differentia for human beings would include, *inter alia*, bipedality. But, just as with the house, there is no real explanatory power in simply giving a list of differentia. That would be just like providing a set of blueprints, whereas what we really need is an account of why there is a species whose members have precisely those differentiating features. Such an account would explain the *unity* of the differentiating features.

At this point in Eta 3, Aristotle does not develop these critical points further, but he comes back to them in the final, and most important, chapter of the book, Eta 6. Eta 6 is the bridge between the focus on matter, form, and substance in Zeta and Eta 1–5, on the one hand, and the focus on potentiality and actuality in Theta.[38] The connection comes via Aristotle's solution to the problem of unity—or rather, as we shall shortly see, to the *dis*solution of the problem.

Eta 6 opens with a reference back to Eta 3, and a restatement of the problem of unity:

> To return to the difficulty which has been stated with respect to definitions and numbers, what is the cause of the unity of each of them? In the case of all things which have several parts and in which the whole is not, as it were, a mere heap, but the totality is something besides the parts, there is a cause of unity; for as regards material things contact is the cause in some cases, and in others viscidity or some other such quality. And a definition is a formula which is not one by being connected together, like the *Iliad*, but by dealing with one object.—What then is it that makes man one; why is he one and not many, e.g. animal-biped.[39]

[38] For an influential account of the detailed structure and argument of Eta 6, see Harte 1996. Keeling 2012 proposes a different view, which in its essentials dates back to Ross.

[39] *Metaphysics* Eta 6 1045a7–17, trans. W. D. Ross in ROT.

Again, Aristotle emphasizes that it is not enough to give a list of identifying and individuating features. The features alone do not explain unity. They only explain unity in the context of a more overarching account of the essence or form of a human being.

Back in Zeta 17, this is where Aristotle left the matter. He emphasized there that the form is what "makes *this* thing flesh and *that* a syllable."[40] But in a sense this simply pushes the problem one step back. Bringing in a reference to form is a definite improvement on listing differentia. But it seems to be a clear implication of the discussion of unity in Eta 3 that exactly the same question can be posed about the unity of matter and form as about the unity of the differentia. To see this, go back to the passage from Eta 3 and re-read it, substituting the word 'form' for the word 'juxtaposition.' On the face of it, then, there is a very real question about the unity of matter and form.

The key move that Aristotle makes in Eta 6 is to argue that the question about the unity of matter and form disappears when we conceptualize matter as potentiality and form as actuality. Here is one key passage:

> Clearly, then, if people proceed thus in their usual manner of definition and speech, they cannot explain and solve the difficulty. But if, as we say, one element is matter and the other is form, and one is potentially and the other actually, the question will no longer be thought a difficulty.[41]

The difficulty dissolves, according to Aristotle, because when we think of matter as potentiality and form as actuality we will appreciate that, properly speaking, matter and form are not two distinct things. And if matter and form are not two distinct things, then the question of their unity cannot arise.

[40] *Metaphysics* Zeta 17 1041b26–27, trans. W. D. Ross in ROT.
[41] *Metaphysics* Eta 6 1044b20–25, trans. W. D. Ross in ROT.

Aristotle makes this line of reasoning absolutely explicit in the closing lines of Eta 6:

> But, as has been said, the proximate matter and the form are one and the same thing, the one potentially, the other actually. Therefore to ask the cause of their being one is like asking the cause of unity in general; for each thing is a unity, and the potential and actual are somehow one. Therefore, there is no other cause here unless there is something which caused the movement from potentiality into actuality.[42]

When he talks about the cause of the movement from potentiality into actuality, he is presumably referring to artifacts. The bronze matter (*qua* potentiality) is transformed into the bronze sphere (*qua* actuality) by the sculptor—or, more accurately, by the sculptor's knowledge and plan, which is what Aristotle typically takes to be the efficient *aition*. But what about the non-artifactual cases? These include living organisms, which are what most concern us in the context of *De Anima*. What does Aristotle mean by saying that in these cases, "there is no other cause"?

This question takes us right back to Aristotle's teleology. When he says that there is no other cause, this means: no other cause besides the form, which we have seen typically incorporates the final cause. There are some tantalizing clues in Eta 5 about how this is supposed to work. Aristotle there considers what might seem to be a rather recondite issue about how matter relates to contrary states. Part of what it is for matter to be understood as potentiality is that it can take on either of two contrary states. The human body is potentially healthy and potentially unhealthy. Water is potentially wine, but also potentially vinegar. But, Aristotle is at pains to emphasize, both the human body and water stand in different relations to these

[42] *Metaphysics* Eta 6 1045b17–22. Tr. W. D. Ross in ROT.

two contraries. One needs to be viewed as a positive (health and wine), while the other is a privation. He writes:

> E.g. if the body is potentially healthy, and disease is contrary to health, is it potentially both? And is water potentially wine and vinegar? We answer that it is the matter of one in virtue of its positive state and its form, and of the other in virtue of the privation of its positive state and the corruption of it contrary to its nature.[43]

What makes something a positive potentiality, as opposed to a privative potentiality, is the nature of the individual organism. This is its form, teleologically construed. In other words, each organism has, as a function of the essence of its species, a natural course of development and a natural type of proper functioning, tied to what allows the organism to flourish. This is all part of the form of the organism. The connection with actuality comes because Aristotle characterizes the actuality of an organism in terms of function and development.[44] An organism attains actuality when it is fully developed and functioning properly. That is the end (*telos*) for the organism, and *entelecheia*, one of Aristotle's two terms for actuality, is a neologism constructed from the word *telos*.

* * *

This brief journey through Aristotle's discussion of matter and form in the first two books of the *Physics* and in *Metaphysics* Eta has brought out some of the complexities of his theoretical framework. The notion of form is intimately bound up with the concepts of essence, definition, and actuality. Running through all of these is the thread of Aristotle's teleology. With this background in place, we

[43] *Metaphysics* Eta 5 1044b30–34, trans. W. D. Ross in ROT.
[44] For further discussion see Charles 1994.

are well placed to make a start on Aristotle's positive account of the *psuchê* in *De Anima* II.

Further reading

The focus readings for this chapter could profitably be studied in the relevant volumes of the Oxford Clarendon Aristotle Series—Charlton 1995 on *Physics* I and II, and Bostock 1994 on *Metaphysics* Zeta and Eta. Both have thought-provoking commentaries. On *Physics* I.7 see Lorenz 2019 and Morison 2019.

The secondary literature on Aristotle's notions of substance, matter, and form would take the most determined reader several lifetimes to exhaust. Those with less time to spare would do well to begin with the overview of hylomorphism in the *Physics* in chapter 2 of Shields 2014. Bostock 2006 contains essays on matter (essay 3) and form (essay 5) in the *Physics*. Cohen 2012 juxtaposes the *Physics* with *De Generatione et Corruptione*. On the important question of Aristotle's teleology, see essay 4 in Bostock 2006, Leunissen 2010, and Charles 2012.

For an overview of Aristotle's discussion of substance in the *Metaphysics*, chapter 6 of Ross 1995 (first edition 1923) is hard to beat, particularly if complemented by pp. 265–293 of Lear 1988. Witt 1989 is an accessible book-length discussion of Aristotle's view of substance in the context of essentialism in contemporary metaphysics. Frede 1987a and 1987b have been justly influential. Charles 1994 explores Aristotle's hylomorphism in the central books of the *Metaphysics*. On Eta specifically, see Harte 1996 and Keeling 2012 (in addition to Bostock's commentary).

5

The accounts of *psuchê* in *De Anima* II

Focus Texts *De Anima* II.1–2

Aristotle turns to offering a positive account of the *psuchê* at the beginning of *DA* II. In the very first chapter of the book he gives three different formulations of what might be termed his official account of the *psuchê*, using the apparatus of hylomorphism explored in the last chapter. He proposes that the *psuchê* is the form of the body, with the different formulations drawing attention to different aspects of this basic idea. Then, in DA II.2 and DA II.3, he sets the agenda for the remainder of *De Anima*, showing how the official account provides a blueprint for the systematic investigation of the various capacities of the *psuchê*. We cannot understand the form of a living being, Aristotle argues, without understanding the activities and capacities that make it what it is and allow it to flourish. For that reason, the bulk of DA II and all of DA III are devoted to detailed accounts of nutrition, locomotion, perception, imagination, desire, reasoning, and goal-directed action. These capacities form a hierarchy, and every living thing, every organism with a *psuchê*, has some subset of those capacities.

This chapter begins in Section 5.1 by examining the three formulations of the official account. Section 5.2 then explores how the official account satisfies the constraints on an adequate account of the *psuchê* that emerged from Aristotle's discussion of his predecessors in DA I. In DA II.2 Aristotle returns to the question of whether the *psuchê* is separable from the body. We will consider

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his remarks in Section 5.3 before turning, in Section 5.4, to an enigmatic aside at the end of the chapter—the mysterious "sailor" comment. Section 5.5 explains how DA II.3 sets the agenda for the rest of *De Anima* and introduces Aristotle's hierarchy of capacities.

5.1 Aristotle's official account of the *psuchê*

The discussion in the first few sentences of DA II.1 is very compressed. Aristotle is clearly assuming that his readers are familiar with the basic conceptual framework of hylomorphism, as developed in more detail in the *Physics* and *Metaphysics*, and he offers a short recap before moving rapidly toward his definition of the *psuchê* as the form of the body. It is worth briefly reviewing how he sets things up, because there are some subtleties in the discussion and a distinction that we have not yet encountered.

The discussion opens with the statement that substance (*ousia*) is one, and presumably the most fundamental, class (*genos*) of existing things. He divides the general class into three sub-classes—substance as matter, substance as form, and substance as "the [thing] out of these" (*to ek toutôn*).[1] He immediately identifies matter as potentiality (*dunamis*) and form as actuality (*entelecheia*)

[1] DA II.1 412a6–9, trans. Shields. See above at Section 1.3 for comments on the translation issue here. Aristotle does say at 412a16 that a living body is a substance *hôs sunthetê*, and there are similar formulations elsewhere in the corpus. Shields translates "as a compound," which, while linguistically correct, is potentially misleading, because Aristotle certainly did not think that a living body is a compound of matter and form in his technical sense of compound (on which see Section 3.4 above). The elements of an Aristotelian compound *stricto sensu* are spatially distinct from each other in a way that matter and form cannot be. Hence it would be useful to find a less loaded translation—perhaps 'composite.' It is significant that Alexander of Aphrodisias in his *De Anima*, which is not a commentary on Aristotle's *De Anima* but clearly an articulation of an Aristotelian position, puts matters somewhat more precisely. He distinguishes a generic notion of being out of something (*einai ek tinos*) and then makes clear that the mixing relation, the compounding relation, and the matter/form relation are different ways in which something can be out of other things. In fact, his central argument for the *psuchê* being the form of the body involves demonstrating that the organism can be neither a compound nor a mixture of matter and form. See Alexander, *De Anima* at pp. 13–15 (Caston 2012a). In his translation of Alexander, Caston translates *einai ek tinos* as 'to be composed from' (see his note 99 at pp. 88–89).

and then distinguishes two different forms of actuality. His presentation is very succinct. He writes: "actuality is spoken of in two ways, first as knowledge is and second as contemplating is."[2] Aristotle is referring to two different ways in which someone might possess a capacity or ability. Capacities certainly exist when they are not being exercised. Someone who is asleep might nonetheless possess a good working knowledge of geometry and would clearly be in a different state from a sleeping person who had never studied geometry. But knowledge of geometry is most actual, so to speak, when it is being exercised in proving a theorem. This is the distinction between first actuality (which Aristotle sometimes refers to as second potentiality) and second actuality. It is worth noting, from a linguistic point of view, that he uses a noun (*epistêmê*) to denote his example of first actuality, and a verb (*theôrein*) for second actuality, indicating that the distinction is between a state and a process.

After this brief review of the basic framework, Aristotle moves quickly to apply it to the matter at hand. The first step is straightforward. Everything that has *psuchê* is a natural body and so is a substance with both matter and form. Then there is a rather compressed passage:

> But since it [i.e., a natural body having life] is also a body of this sort—for it has life—the *psuchê* could not be a body, for the body is not among those things said of a subject, but rather is spoken of as a subject and as matter.[3]

Implicit here must be the thought that the *psuchê* is what bestows life, which is for Aristotle a pretheoretical datum even more fundamental than the *endoxa*. If the *psuchê* bestows life then it must bestow it on the body, which means that it must be in some sense an attribute of the body.[4] Since the body is substance *qua* matter, and

[2] DA II.1 412a10–11, trans. Shields.
[3] DA II.1 412a16–19, trans. Shields.
[4] This is basically Ross's reconstruction. See Ross 1961 at pp. 212–213.

the organism is enformed matter, it follows that the *psuchê* must be form. And that indeed is the conclusion that he draws in the very next sentence.

> **The official account: Formulation 1**
> It is necessary, then, that the *psuchê* is a substance as form of a natural body which has life in potentiality.[5]

As indicated earlier, Aristotle gives two further formulations of his official account in the next few lines. Here they are:

> **The official account: Formulation 2**
> The *psuchê* is the first actuality (*entelecheia*) of a natural body which has life in potentiality.[6]

> **The official account: Formulation 3**
> The *psuchê* is the first actuality (*entelecheia*) of an organic natural body.[7]

It is clear from the context that these are different formulations of a single account rather than alternative accounts. The fifteen or so lines that separate the three formulations deepen the first formulation by elucidating two of its key notions.

> **Elucidation 1**
> In formulation 2, Aristotle replaces 'substance as form' by 'first actuality.'

> **Elucidation 2**
> In formulation 3, Aristotle replaces 'a natural body which has life in potentiality' by 'an organic natural body (*sômatou phusikou organikou*).'

[5] DA II.1 412a19–21, trans. Shields.
[6] DA II.1 412a27–28, trans. Shields.
[7] DA II.1 412b5–6, trans. Shields.

The first elucidation is relatively straightforward. As we saw in Chapter 4, the concept of form is complex and multi-faceted. Aristotle is making clear that he wants to focus, in defining the *psuchê*, on the strand that analyzes form as actuality. And by formulating the distinction in terms of first actuality, he sets the agenda for the remainder of *De Anima*. The distinction between first actuality and second actuality marks the difference between capacities and the exercise of those capacities, and Books II and III are primarily devoted to taxonomizing and analyzing how these various capacities of the *psuchê*, from nutrition to abstract intellect, are exercised. We will return to these matters in Section 5.5.

The second elucidation has raised some problems for translators and commentators. In order to explain the sense in which the body has life potentially, Aristotle characterizes it as *organikon*. This adjective transliterates straightforwardly into English, but is something of a false friend. Here are some translations of the term as used in this context:

organic (Shields 2016)
instrumental (Reeve 2017—see also Menn 2002)
organized (Ross 1942)
furnished with organs (Hicks 1907—also adopted in Valverde's 2019 Spanish translation)

This is quite a range. Part of what is causing difficulties is that the closely associated noun *to organon* has a variety of meanings, *per* LSJ.[8] Particularly important for Aristotle is the meaning of *organon* as 'tool' or 'instrument,' including both engines of war and musical

[8] The meaning of *organikon* is illuminatingly discussed in Shields's commentary at pp. 171–173 and in Menn 2002 at 108–117. Menn himself favors a rendering closer to Reeves's "instrumental," which he interprets in a somewhat Platonistic light: "Aristotle finds the arts useful as a model for how something stable and 'perfect' can move and give order to something subordinate to itself. In particular, the art, or the artisan qua artisan, is an unmoved mover, of the *organa* and of the bodies that the *organa* are applied to, and Aristotle thinks that the soul must be an unmoved mover of the body in order for it to be constantly a source to the body of the same teleological order" (p. 113).

instruments. Since the time of his earliest followers, his logical writings have been collectively known as the *Organon*, as a sort of philosophical toolkit. But an *organon* can also be a bodily organ—any sort of organ, not necessarily a sense organ. It is worth noting also that Aristotle gives two illustrations by analogy of the *psuchê* in DA II.1—the definition of an axe and the definition of an eye. Both qualify as an *organon*.

Each of the available translations picks up on (at least) one strand in the meaning. But, arguably, each is incomplete. The problem with 'organic' is that it seems to be more of a synonym of 'living' (as in organic vs. inorganic chemistry) and so is not very informative. 'Instrumental' picks up on the idea of an *organon* as a tool or instrument, but might be taken to imply that the *psuchê* is independent of the body and makes use of it, in a way that could suggest a relation of subordination. It is essential to the *psuchê*, of course, that the body be 'organized' and 'furnished with organs,' but Aristotle's focus is more on what the organs can do and the capacities that they subserve. The best explanation of what Aristotle means by describing the body as *organikon* may be in Hicks's note on the first occurrence of *organikon* at 412a28: "provided with organs, whereby are meant instruments subserving the several faculties and adapted to the performance of function."[9] So—putting it all together, we might gloss Aristotle's account of the *psuchê* in DA II.1 as: the various life-supporting and life-enhancing capacities of a natural body that is provided with organs subserving those capacities and adapted to the performance of function.[10]

5.2 Looking back to the program of DA I

Exploring Aristotle's discussion of the *endoxa* in DA I, we identified a number of constraints upon a satisfactory account of the *psuchê*

[9] Hicks 1907, p. 313.

[10] The distinction between life-supporting and life-enhancing is intended to capture the distinction between two types of teleology developed in Leunissen 2010.

emerging from Aristotle's criticisms of his predecessors and from the various pieces of argumentation and analysis that he engages in along the way. In this section I review those constraints and briefly indicate how they are satisfied by the official account that is presented in DA II.1.

The first two constraints both have to do with motion and emerge from Aristotle's critical discussion of the almost universally held view that the *psuchê* brings about motion in the body in virtue of being itself in motion. Rejecting this idea, Aristotle seems clearly to affirm both

> (1) Any satisfactory account of the *psuchê* must explain how the *psuchê* moves (in the sense of locomotion) in virtue of the body moving, rather than independently of it;

and

> (2) any satisfactory account of the *psuchê* must explain the distinctive way in which the *psuchê* brings about *actions*, which are more than just bodily movements.

These are both satisfied by the official account. If the *psuchê* is ultimately to be understood in terms of a living-thing's life-supporting and life-enhancing capacities, then it is immediately clear that the *psuchê* is only in motion to the extent that the body is. The motion of the *psuchê* is ultimately the embodied animal exercising its distinctive capacities (with the qualification, to be discussed further below, that *nous*, the capacity for thinking, will eventually turn out not to be tied to the body in the same way as other capacities are). Moreover, what makes something an action (as opposed to a mere bodily movement, such as a reflex) is that it is carried out purposively either to support or to enhance the life of the organism.

Understanding the *psuchê*, as Aristotle does, in terms of the organism's capacities and functions solves a number of metaphysical problems (while, of course, raising others—see the next

section). One problem that it neatly solves is satisfying the third constraint:

(3) No satisfactory account can take the *psuchê* to be a magnitude.

Capacities and functions are not extended magnitudes (although, of course, the associated organs are). Aristotle's account explains how the *psuchê* is intimately tied to the body without actually being a body of any sort. It follows from this that we should be wary of describing the living organism as a *compound* of matter and form, although Aristotle himself is not as careful as he might be in this regard.[11] On Aristotle's strict understanding of a compound, only magnitudes can be compounded.[12] The relation between matter and form is very different from that between the different letters in a syllable (assuming the letters to be inscriptions or utterances), to take one of his favorite examples of a compound. But it is not in any way mysterious. It is, in essence, the relation between a living body and what that body does. As the second-century CE Aristotelian Alexander of Aphrodisias saw very clearly, this relation is in an important sense *sui generis*. In particular, it is fundamentally different from both compounding and mixture.[13]

As we will see in Section 5.5, Aristotle thinks that his official account is really a gateway to the detailed study of the relevant capacities and functions. In that sense, therefore, the following constraint is immediately satisfied:

(4) A satisfactory account of the *psuchê* must explain how the *psuchê* can perform its distinctive functions and operations—and, in particular, the precise sense in which the *psuchê* is the

[11] See note 1 in this chapter.

[12] See Section 3.4 above and the references there for more on Aristotle's discussion of compounds and mixtures.

[13] See Alexander, *De Anima* at pp. 13–17 (Caston 2012a, pp. 40–44) and note 1 to this chapter. Alexander's own theory of mixture was developed as part of a polemic against Stoicism, on which see Kupreeva 2004.

source of perception, thinking, and other psychological states, processes, and operations.

That leaves the final two constraints, both of which are broadly metaphysical. First:

(5) A satisfactory account of the *psuchê* must explain why the *psuchê* is destroyed when the body is destroyed.

Plainly, this is satisfied by the official account. If the body is destroyed then there is no living organism and so no capacities or functions (again, with the qualification that Aristotle in DA II leaves open the possibility that some capacity or function, i.e., *nous*, might survive the destruction of the body). Moreover, Aristotle's definition has no difficulty satisfying the requirement that the *psuchê* should be both unified and unifying.

(6) A satisfactory account of the *psuchê* must explain how it is itself unified and how it serves to unify the body.

The key work is done by Aristotle's teleological understanding of the related concepts of form and actuality. As explained in Chapter 5 above, the form of the organism specifies its natural course of development and its proper functioning. The actuality (*entelecheia*) of the organism occurs when it is fully developed and functioning properly. What unifies the different components of the *psuchê* is that they all contribute to this development and functioning—a development and functioning that also bestows unity upon the body.

5.3 Separability in DA II.1

It is not surprising that, immediately following the third formulation of the official account, Aristotle returns to the general question

of how the *psuchê* and the body are related. This question occupies him for the remainder of DA II.1, and us for this section.

In the very next sentence after stating that the *psuchê* is the first actuality of an *organikon* natural body, Aristotle draws a striking conclusion:

> For this reason it is also unnecessary to inquire whether the *psuchê* and the body are one, just as it is also unnecessary to ask this concerning the wax and the shape, nor generally concerning the matter of each thing and that of which it is the matter.[14]

It is important to be clear on what Aristotle is *not* saying here. He is not affirming that the *psuchê* and the body are identical. Any such claim would make a nonsense out of his hylomorphism, which obviously depends on matter being different from form, and would also be inconsistent with his example, since a shape stamped into a piece of wax is plainly not the same as the wax into which it is stamped. The reason he states that it is unnecessary to inquire whether the *psuchê* and the body are one is not that it is obvious that they are one. But nor is it the other way around. Aristotle does not think that it is unnecessary to inquire whether the *psuchê* and the body are one, because it is obvious that they are *not* one, in the way in which it is obvious that a stylus and a wax tablet are not one.

To understand what is going on here we need to remember, as Aristotle reminds us in the next sentence, that being one is said in many ways (*pleonakôs legetai*). There is a sense in which the matter and the form, the body and the *psuchê*, are not one. They are elucidated in different ways and correspond to two different

[14] DA II.1 412b6–8, trans. Shields. There is a translation issue here. In the case of *dei*, the impersonal verb translated as 'it is necessary,' Greek does not always distinguish clearly between wide scope and narrow scope negation—that is, between 'it is not necessary to F' (wide) and 'It is necessary not to F' (narrow). See Smyth 1956, §2714b, referring back to §2693. This sentence has been translated both ways. Shields adopts a wide scope reading and gives his reasoning at pp. 173–174.

explanatory projects. The questions that are answered by pointing to the *psuchê qua* form are very different from the questions that are answered by pointing to the body *qua* matter. At the same time, though, there is a sense in which the *psuchê* and the body are one, without being (as we would now put it) strictly identical. We cannot individuate and understand one without referring to the other.

This symbiotic relation is (relatively) easy to understand in one direction. The *psuchê*, as Aristotle understands it, is defined in terms of the development, functioning, and flourishing of the embodied organism. If the body is removed from the equation, then there is literally nothing left to understand (with the qualification that we are talking here about the *psuchê* as a whole). For that reason the *psuchê* depends upon the body.

To understand why the dependence holds in the opposite direction, we need to look at the two further illustrations that Aristotle gives of the relation that holds between the body and the *psuchê* of a living organism. If an axe were a living thing, Aristotle says, then its *psuchê* would be its essence, and the essence of an axe is (presumably) the function it serves of cutting.[15] An axe that is not capable of cutting (perhaps because the handle is rotten and the bronze is brittle) would not, strictly speaking, be an axe. It would be an axe only homonymously.[16] In other words, it would be called an axe only because it bears some sort of family resemblance (perhaps the same physical appearance) as a genuine axe, which must be capable of cutting. There is an important question that Aristotle does not settle, however. The matter of the axe is presumably the wood and the bronze. If the implement they compose is no longer

[15] Aristotle does not actually spell this out, but the effectiveness of the analogy depends upon it being implicit.

[16] This is a technical term for Aristotle that first appears in the *Categories*. Homonymy occurs when two different things have the same name—as in the English word 'bank.' Aristotle is particularly interested in cases of homonymy where there is a core semantic thread underlying the different usages of the term—what G. E. L. Owen famously called its *focal meaning* (Owen 1960). This type of *core-dependent homonymy* (Shields 1999) is manifest in many of the things that are said in many ways, including being and goodness.

capable of cutting, does the matter of the axe still persist? Aristotle does not say.

There is no such ambiguity in the second example, however. Here he discusses the eye. If an eye were an independently existing organism, then the physical eye would be the matter and the *psuchê* would be sight. Aristotle makes it clear that without the *psuchê* there can be no matter:

> For if an eye were an animal, its *psuchê* would be sight, since this would be the substance of the eye corresponding to the account. The eye is the matter of sight; if sight is lost, it is no longer an eye, except homonymously, in the way that a stone eye or painted eye is.[17]

Here it seems on the face of it that the matter depends upon the form, since Aristotle affirms that if sight (form) is lost then the eye (matter) is no longer an eye.

Transposing to the relation between body and *psuchê*, it would seem to follow that a body that is not living and possessed of *psuchê* is a body only homonymously. Aristotle himself is often stated to have explicitly bitten this bullet. In fact, it looks as if he is saying precisely that immediately following the discussion of the eye, when he writes:

> What has been said in the case of parts must of course also be understood as applying to the entire living body. For there is an analogy: As one part is to one part, so the whole perceptual faculty is to the whole of the body which is capable of perception, insofar as it is capable of perception. The body which has cast off its *psuchê* is not a being which is potentially such as to be alive; this is rather the one which has a *psuchê*.[18]

[17] DA II.1 412b20–22, trans. Shields.
[18] DA 412b23–26, trans. Shields.

It is worth observing, though, that what Aristotle actually says is fairly truistic, namely, that a corpse is not potentially alive.[19] He immediately observes that the seed and fruit *are* potential living bodies, even though they are not themselves alive. In general, Aristotle is not as careful as he might be in distinguishing the trivial claim that the embodied organism ceases to exist in the absence of life (as in the axe example) and the very substantive claim that the matter ceases to exist in the absence of life (as in the eye example).

Still, there is a deeper issue here. In an important and much-discussed contribution in 1972, J. L. Ackrill claimed to have found a significant tension in Aristotle's conception of matter and form.[20] According to Ackrill (and many others), the coherence of Aristotle's hylomorphism rests upon the matter-form relation being contingent. That is to say, matter must be capable of existing independently of its being enformed—and, moreover, it must be identifiable and comprehensible independently of being enformed. But, according to Ackrill, Aristotle's discussion of the relation between organic bodies and the *psuchê* is inconsistent with this contingency requirement. A human body, for example, can exist only as the body of a living human being—in any other condition it is a body only homonymously.

Ackrill took this to be a serious problem for Aristotle, and there is an extensive literature trying to show that Aristotle does actually allow the relation between organic body and *psuchê* to be contingent. One popular strategy is to argue that Aristotle allows the body to be thought of in different ways, and that under one of those ways of thinking about it the body is indeed contingently related to the living organism whose body it is. Jennifer Whiting, for example, argues that Aristotle in effect distinguished between what she terms functional flesh and compositional flesh. The functional

[19] The same holds for a lengthy passage in *On the Parts of Animals* often discussed in this context. See 640b34–641a34.

[20] Ackrill 1972, on which see, *inter alia*, Whiting 1992, Shields 1993, and Frey 2007

body is, as its name suggests, individuated functionally. We can only make sense of it relative to the functions and capacities that collectively make up the *psuchê*. The compositional body, on the other hand, is not functionally individuated. We can make sense of it in terms of its composition and ingredients (recall that, for Aristotle, the homoiomerous parts of the body, such as flesh and bone, are mixtures of the elements). Viewed from a compositional perspective, the body is indeed contingently related to the *psuchê*.[21] It is what it is in virtue of the elements of which it is composed, independently of any functions that it might perform in a suitably enformed, organic body.

Christopher Frey has plausibly argued, however, that this general strategy is unlikely to succeed, because it sits uneasily with Aristotle's theory of mixtures.[22] His theory does not, so to speak, make mixtures functionally neutral. In particular, he makes a point of distinguishing between organic mixtures and non-organic mixtures. Consider the following passage from *On The Generation of Animals*:

> While, then, we may allow that hardness and softness, stickiness and brittleness, and whatever other qualities are found in the parts that have life and *psuchê*, may be caused by mere heat and cold, yet, when we come to the principle in virtue of which flesh is flesh and bone is bone, that is no longer so; what makes them so is the movement set up by the male parent, who is in actuality what that out of which the offspring is made is in potentiality.[23]

To cut a long and slightly bizarre biological story short, on Aristotle's theory the male parent transmits form. If then, what makes bone

[21] See Whiting 1992 and, for other versions of this strategy, Cohen 1992 and Shields 1993.

[22] Frey's objections to what he calls the "two-body" thesis is developed at length in Frey 2007.

[23] GA II.1 734b31–36, trans. A. Platt in ROT.

bone and flesh flesh is form, then the prospects of developing a form-neutral compositional body from the homoiomerous body parts are somewhat dim.

And, stepping back from the details of Aristotle's scientific theories, this is not surprising. Arguably, in fact, the way he develops his hylomorphism in the central books of the *Metaphysics* is directly incompatible with the view that Ackrill, Whiting, and others are trying to pin on him. Recall that Aristotle in Eta 6 explicitly argues that mapping the matter/form distinction onto the actuality/potentiality distinction solves the unity problem for individual substances. This is one of the principal theoretical advantages of bringing the machinery of potentiality and actuality into play. We do not, Aristotle thinks, have to explain the unity of matter and form if we think of form as the actualization of a (material) potentiality. But this strategy can only work if matter and form are completely interdependent in a way that rules out any contingency in *this* matter being enformed in *this* way. The form of the organism is the full actualization and development of the capacities and functions that are made possible by the structure and organization of *this* body and *these* bodily organs. But then, on this conception of matter and form, there is no scope at all for thinking that the relation between them is contingent.

Aristotle himself is responsible for much of the confusion here. The problem is that he continually appeals to artifacts to illustrate the distinction between matter and form. We are frequently invited to take the bronze of the statue as its matter and the sculpted shape as its form, and the relation between the bronze and the statue is plainly contingent. This piece of bronze could have been a completely different statue (or even a brazen sphere), while the statue could have been made of copper or wood, or from a completely different piece of bronze. But the problem is that, by Aristotle's own lights, this is a misleading way of illustrating the matter/form distinction as it applies to living organisms. The matter of an organism

is fundamentally different from the matter of a statue or other artifact.

As a corollary to this, it would seem to follow that the prospects are not promising for interpreting Aristotle as a philosophical functionalist *avant la lettre*, at least with regard to living organisms[24] The key tenet of contemporary functionalism, common to all of its many variants, is the concept of *multiple realizability*.[25] Functionalists define mental states in terms of their functional role—which in most, but not all, versions of functionalism, is understood in terms of the state's typical causes and effects. It is a key tenet of the view that functional roles can be fully specified and understood without making any references to the particular physical structure that implements/realizes that functional role. That is, functionalists hold that the relation between role and realizer is contingent. A particular functional role is not tied to a particular realizer. It can be realized in multiple different types of physical structure—in different species of animal, for example. The role/realizer relation is often compared to the relation between software and hardware in a computer. A given piece of software, say Microsoft Word, can run on very different types of machine—mac, PC, Android phone, iPad, and so on.

While it is true, as we have seen at length, that the concept of function is front and center in Aristotle's hylomorphism, the conception of form that he develops in the *De Anima* and *Metaphysics* Eta seems fundamentally antithetical to functionalism in anything like its technical sense, given the interdependence that he emphasizes between matter *qua* potentiality and form *qua* actuality.[26] The *psuchê*, for Aristotle, is not multiply realizable,

[24] This interpretation was famously proposed by Martha Nussbaum and Hilary Putnam separately and then jointly (in Nussbaum and Putnam 1992). See also Shields 1990 and, for critical discussion, Burnyeat 1992 and 1995.

[25] For more on functionalism see Bermúdez 2005, ch. 3.

[26] This is arguably more important than the fact, emphasized in Caston 2012b, for example, that Aristotle does not offer anything approaching canonical definitions of functional roles. There are versions of contemporary functionalism that focus,

because it is to be understood in terms of the capacities and proper functioning of *this* particular type of organic body, which in turn cannot be understood independently of how it is supposed to support and enhance the life of the organism.

5.4 The mysterious sailor

Right at the end of the discussion of separability in DA II.1, Aristotle throws out a passing comment that has puzzled readers since Themistius, and no doubt earlier. Immediately after the eye analogy, Aristotle draws what might seem to be the obvious conclusion from his official definition of the *psuchê*, although his formulation is somewhat tortured: "Therefore, that the *psuchê* is not separable from the body, or some parts of it if it naturally has parts, is not unclear."[27] The syntax is more than a little unclear in English, where "it" could refer to either the *psuchê* or the body, but clear enough in Greek, which uses a feminine pronoun referring back to the *psuchê*. Aristotle's point is that the *psuchê* as a whole cannot be separable from the body, and the same holds for those parts of the *psuchê* that are actualities of parts of the body (as seeing is the actuality of the eye). He then throws out a potential qualification: "Even so, nothing hinders some parts from being separable, because of their not being actualities of a body."[28] With respect to the argument as so far developed, this seems reasonable enough. The general case for non-separability has been made on the basis of the *psuchê* being the actuality of the body. That case will carry over to such parts of

as Aristotle does, on psychological capacities rather than psychological states. This is what Bermúdez 2005 refers to as psychological functionalism, as proposed by Robert Cummins and (perhaps) Ruth Millikan, who also emphasizes the importance of teleology. Psychological functionalism shares a commitment to multiple realizability with standard, philosophical functionalism—but not, it would seem, with Aristotle.

[27] DA II.2 413a3–5, trans. Shields.
[28] DA II.1 413a6–7, trans. Shields.

the *psuchê* as are themselves actualities of some part of the body. But Aristotle has not actually shown, or even tried to show, that the *psuchê* has no parts that are not actualities of some body part. In fact, as we'll see further below, in DA III Aristotle emphasizes that *nous* actually fits this description, since it has no bodily organ.

At this point Aristotle offers yet another qualification, which seems to introduce a whole new set of issues. He writes: "It is still unclear, however, whether the *psuchê* is the actuality of the body in the way that a sailor is of a ship."[29] Taken at face value, Aristotle is raising a possibility that seems to have been conclusively ruled out by everything that precedes it in DA II.1. There seems to be no way of thinking about the relation between a sailor and a ship on which we could say, for example, that the sailor is form and the ship is matter, with 'form' and 'matter' elucidated as we have been elucidating them (even setting aside the difficulty that Aristotle is once again bringing artifacts into a discussion of living organisms). The sailor is physically distinct from the ship. He occupies a determinate location within it, and can leave it more or less at will.

Alexander of Aphrodisias is incisive on this point. In his *De Anima* he offers a complicated argument by elimination for the thesis that the *psuchê* is the form of the body. There are, he suggests, eight different ways in which one thing can be said to be "in" another thing, none of which apply to the relation between *psuchê* and body, except the way in which a form is in matter. As a lemma in this argument he considers and rejects the hypothesis that the *psuchê* is in the body "in the way that something is in a vessel or a place."[30] The particular version of the hypothesis that he rebuts refers unmistakably to the passage we are discussing (although Alexander talks about a pilot or steersman, *kubernêtês*, rather than a sailor, *plôtêr*). Alexander offers a barrage of arguments against

[29] DA II.1 413a8–9, trans. Shields.

[30] Alexander, *De Anima* 13, 18–19 (Caston 2012a, pp. 45–46). The whole argument can be found at 11, 14 to 17, 8 (pp. 39–44 in Caston 2012a).

taking the *psuchê* to be equivalent either to the art of piloting, or to the physical pilot. Against the first, he objects, *inter alia*, that it effectively collapses into Aristotle's own view, since it would make the *psuchê* both non-bodily and inseparable from the body. Against the second, he identifies (in addition to the obvious problems of the *psuchê* having a specific bodily location and being able to leave and return to the body) a threat of regress. If the *psuchê* is akin to the pilot, then it will itself have both matter and form, with the form being a better candidate for the "true" *psuchê*, at which point we no longer have an alternative to Aristotle's own account. It is hard to imagine that these points could have completely escaped Aristotle's notice. So what exactly could he have been getting at with the mysterious comment about the sailor?[31]

One possible clue is that this is not the first mention of a sailor in *De Anima*. Sailors and ships made an appearance back in DA I.3. Aristotle there is discussing two ways in which things can be said to move. As we saw in Section 2.3, something can move in virtue of itself or in virtue of something else, and a sailor in a ship is Aristotle's example of the second type of motion:

> By "in virtue of another" we mean whatever is moved by being in something which is in motion, as for instance sailors are; for they are not moved in the same way as the ship is—the one is moved in virtue of itself and the other by being in what is in motion.[32]

Perhaps, then, Aristotle is referring back to this discussion, and making the point that the account of the *psuchê* that he has just

[31] Ross in both his editions proposes turning the sentence into a disjunction by adding *hê* (which can mean 'or' or 'rather than'), although it is not to be found in any manuscript, so that Aristotle is in effect stating that it remains unclear whether the *psuchê* is an actuality of the body in this way or/rather than in the way a sailor is of a ship. As Shields points out, however, this maneuver simply postpones the problem. A puzzling idea is no less puzzling when it is one of two disjuncts. And the recent editions of Siwek and Valverde have not followed Ross's interpolation.

[32] DA I.3 406a5–8, trans. Shields.

given is silent on the question of whether the *psuchê* is properly said to move in virtue of itself or in virtue of another. If this is right, then the sailor is not directly relevant to the question of separability.

Thomas Aquinas also interpreted the passage as having to do with motion, but in a rather different way. He saw an implicit reference to Plato:

> And, because Plato supposed that the soul is the actuality of body not as a form is but as a mover is, Aristotle adds that **it is** not yet clear **whether soul is the actuality of the body as a sailor** is the actuality **of his ship**—that is, as a mover only.[33]

Yet another way of interpreting the passage as to do with motion has been put forward in modern days, most comprehensively by Theodore Tracy, who writes:

> The sentence at 413a8-9 thus understood marks the end of Aristotle's sketch of the soul as "first act," substantial form or entelechy of the body—its "static" aspect—and introduces the subsequent discussion, larger and more complex, of the soul's dynamic function as efficient cause of all "second acts," the organic reactions involved in nutrition, sensation, appetition, local motion, and even intellectual cognition.[34]

As far as the overall architecture of DA II is concerned, this seems accurate. That is to say, the transition that Tracy describes is about to happen. To put it in terms of a shift from the static to the dynamic is misleading, however. As we have seen, there is nothing static about Aristotle's notion of form, connected as it is to the exercise and actualization of organic functions and capacities. And there is

[33] Aquinas, *A Commentary on Aristotle's De Anima*, para 243, trans. Pasnau (1999, p. 132). The bold text is where Aquinas is using Aristotle's own words.
[34] Tracy 1982, p. 112.

no hint in the text that Aristotle takes himself to be changing the scope of his inquiry from formal causation to efficient causation by mentioning ships and sailors.

That brings us to perhaps the most philosophically interesting reading of the sailor passage, due to the sixth-century Alexandrian philologian John Philoponus in his commentary on the *De Anima*. Philoponus reads this passage as having to do with separability and looking ahead to the later discussion of *nous*, but he interprets it in a very subtle way. He makes a distinction between two senses in which a capacity of the *psuchê* can be said to be inseparable from the body. In the first sense, a capacity is inseparable if, in effect, it has a dedicated bodily organ and it is the actuality of that organ. In this sense, the capacity for thought (*nous*) is separable from the body. But, Philoponus observes, a capacity can also be inseparable from the body in the sense that it cannot itself be exercised and actualized without the body. And in this second sense, *nous* is properly described as inseparable from the body, because "the activities by which it perfects the animal, changing it in this way or that, [these activities] it has inseparable from the body."[35]

Philoponus's ingenious suggestion is that the steersman (like Alexander, he talks about the *kubernêtês*) stands to his ship in both of these relations, and so can be said to be separable in one sense and inseparable in another. So, he interprets Aristotle as using the sailor analogy to make a claim about how, in effect, the separability of *nous* can be said in many ways:

> So in this way, insofar as it is actuality, in respect of these activities, it would be inseparable from the body, just as all the activities of the steersman as steersman are inseparable from the ship, and he is separated as a man, but as a steersman in act, at the same time as he has been separated from the ship these activities have perished for him. In this way, then, the rational soul too, inasmuch as it has

[35] Philoponus, *Commentary* at 224, 31–33, trans. Charlton (2005a, p. 26).

> a separable substance is not actuality of a substance, but inasmuch as it has acquired this relation to a body, by virtue of which also it can be called 'soul' (for it is called 'soul' relative to the body), it is both actuality of the body and inseparable from it. For when it is separated it loses all those activities which it acquired from its relation to it, such as to make it alive, to change it with all the natural changes, and anything else like that.[36]

It may be somewhat of a hermeneutical stretch to think that *this* is what Aristotle had in mind in the sailor passage. However, there is a striking and important point to be extracted from Philoponus's discussion. The notion of separability is highly complex—more complex, even, than is reflected in the distinctions that Aristotle explicitly makes. There is no straightforward way of drawing conclusions about the *psuchê* from Aristotle's hylomorphic account. At a minimum we need to wait for the detailed exposition of individual psychological capacities that is coming up in the rest of the *De Anima*.

5.5 Beyond the official account: Setting the agenda for the remainder of *De Anima*

De Anima does not come to an end at the close of DA II.1. The official account of the *psuchê* is the beginning of Aristotle's work, not the end. He explains why at the beginning of DA II.2, although he frames the discussion in a potentially misleading way. He speaks of proceeding "anew" (*palin*), whereas it would probably be more accurate to describe the transition from DA II.1 to the rest of the book as following through the logical consequences of the official account.

[36] Philoponus, *Commentary* at 224, 34–225, 8, trans. Charlton (Charlton 2005a, p. 26).

In any event, Aristotle explains the key difference between the official account of the *psuchê* and the investigations that follow in these terms: "For it is not only necessary that a defining account make clear the *that*, which is what most definitions state, but it must also contain and make manifest the cause (*aitia*)."[37] The distinction being drawn here is subtle. We know from Aristotle's various discussions of substance and form, that what he calls here a defining account (*horistikon logon*) must specify the essence of what is being defined. Definition, form, account, and essence are all coordinate notions. But then, one might wonder, what is there left to say about something, once its essence has been spelled out?

Bringing causation into the picture is not terribly illuminating, because it is hard to make sense (within Aristotle's framework) of the idea that an essence is caused. Of the different types of cause that Aristotle distinguishes, the formal cause seems the most plausible candidate, but formal causes specify essences, and Aristotle is surely not asking for the essence of the essence. It is presumably for reasons of this type that Ross chose to translate *aitia* here as "ground" (in his translation) and "reason" (in his commentary). But that maneuver does not help much either. Essences are brute facts in Aristotle's intellectual universe. They seem no more the sort of thing that can have a reason or ground than they can be caused.

It is more helpful to look at the illustration Aristotle gives. He writes:

> As things are, statements of definitions are like conclusions. For example: "what is squaring? It is an equilateral rectangle being equal to an oblong figure." But this sort of definition is an account of the conclusion: the one who states that squaring is the discovery of a mean states the cause (*aition*) of the matter.[38]

[37] DA II.2 413a13–16, trans. Shields.
[38] DA II.2 413a17–20 trans. Shields.

The presentation is more than a little compressed, but it is worth taking a closer look. What Aristotle is referring to is the geometrical operation of finding a square with the same area as any given rectilinear figure. This operation is described in Euclid's *Elements* at II.14. It proceeds in two stages. The first stage (employing the procedure outlined in I.45) involves constructing a rectangle with the same area as the target figure. The second stage begins, then, with a figure like the following with the following:

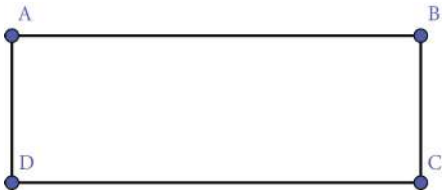

Figure 5.1 The problem: to find a square with the same area as the rectangle ABCD.

We are looking for a square whose area equals AB x BC in the oblong figure depicted in Figure 5.1. The basic method is to find what is known as the mean proportional, or the geometric mean, between the two lengths AB and BC.[39] The geometric mean can be represented as the line BE in Figure 5.2, in which the lines AB and BC are placed end to end.

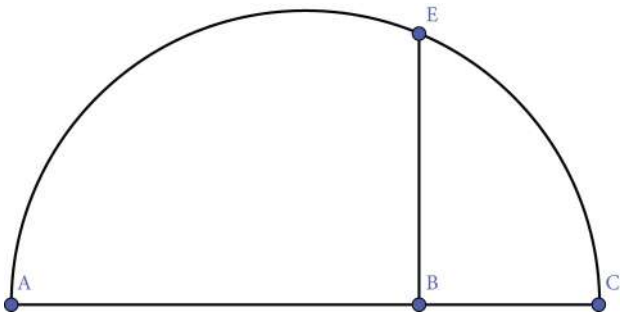

Figure 5.2 The line BE is the mean proportional.

[39] Actually Euclid does not introduce this terminology until VI.13, but as VI.17 makes clear, the construction of the mean proportional in VI.13 is the same as the squaring construction in II.14.

To see this, construct two right-angled triangles ABE and CBE, as in Figure 5.3. Label the sides as in the diagram.

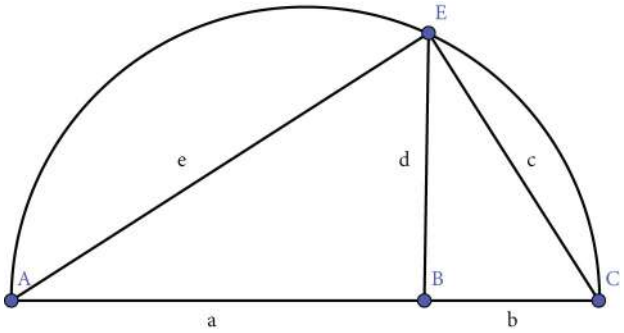

Figure 5.3 Constructing the mean proportional.

The length d is the mean proportional because the ratio d/a is equal to the ratio b/d.[40] From this it follows that $d^2 = ab$.[41] Since ab = AB x BC we are assured that the square with sides equal to BD will have the same area as the rectangle ABCD and hence as our original figure.

So, what has all this got to do with the definition of the *psuchê*? Aristotle's point is that the official definition is informationally equivalent to simply stating the result of the operation of squaring. Just as we cannot really understand what squaring is simply by being told that it yields a square with the same area as a given rectilinear figure, we cannot really understand what the *psuchê* is by being told that it is the first actuality of an organic body having life potentially. In the case of squaring, we need to understand the construction of the mean proportional by means of which squaring is achieved, and also why that operation has the desired result. In the case of the *psuchê* we need to understand the capacities and

[40] This follows because the angle AEC is a right angle, by Thales's theorem, which creates three similar triangles, and similar triangles have proportional sides.

[41] This is the crucial step, and much easier to see algebraically. We know from Pythagoras's theorem that $e^2 = a^2 + d^2$ and that $c^2 = b^2 + d^2$. Likewise, $(a + b)^2 = e^2 + c^2$. So, substituting gives $(a + b)^2 = a^2 + d^2 + b^2 + d^2$. Simplifying yields $a^2 + 2ab + b^2 = a^2 + 2d^2 + b^2$ and then $ab = d^2$.

functions whose exercise and optimal functioning collectively constitute the actuality of the living organism.

Here is another way of putting Aristotle's point. The general definition of squaring is simply a placeholder. What is important is how it is actually applied, and for that we need to understand the appropriate geometrical constructions. Likewise, the official definition of the *psuchê* is a placeholder. What is important is how it is applied, and for that we need to understand the biological and psychological capacities that make the difference between having life potentially and being fully actualized as a living and flourishing organism. It is to providing that understanding that Aristotle devotes the remainder of *De Anima*.

Aristotle sets up the rest of the book by developing the close connection between the *psuchê* and being alive—life is what distinguishes things that have *psuchê* from things that do not. As he characteristically puts it, being alive is said in several ways (*pleonakôs*), and anything that is alive in even one of those senses qualifies as living.[42] At the beginning of DA II.2 he gives a preliminary list of the capacities whose exercise yields different ways of being alive. These include (in the order that Aristotle gives them):

- reason
- perception
- motion and rest with respect to place
- motion in relation to nourishment, decay, and growth

This is not his final and considered list. It does not include imagination and desire, for example, both of which receive extensive discussion in DA II and III. Nor does it include reproduction. But it is enough for Aristotle to sketch out in the middle paragraphs of DA

[42] See Shields 1999, ch. 7 for a discussion of Aristotle's treatment of 'life' as a core-dependent homonym.

II.2 the basic outlines of the hierarchy of living things that he will develop in great detail in subsequent chapters.

The hierarchy of living things is organized around a hierarchy of capacities. The most primitive capacities have to do with nourishment, decay, and growth. Because these are possessed by plants, Aristotle includes plants as living and hence as having *psuchê*. But he emphasizes that these capacities are common to all living things. The next level in the hierarchy comes with the exercise of perceptual capacities. With this we move from the plant kingdom to the animal kingdom. Anything that has perceptual capacities is an animal. But not all perceptual capacities are equal. Aristotle reserves a fundamental role for the sense of touch. It will turn out later that this is because touch yields the most direct perception of pleasure and pain.

Aristotle makes further distinctions within the animal kingdom. Most fundamentally, he distinguishes animals capable of motion with respect to place from sessile (stationary) animals, such as sea urchins. Even sessile animals, however, have (tactile) perception, and with that comes the awareness of pleasure and pain. With the awareness of pleasure and pain come primitive forms of desire and imagination (*phantasia*).[43] Aristotle seems to have been aware that even sessile bivalves (such as mussels and clams) have what we would now call nociceptors to detect noxious stimuli and can display aversive behaviors (e.g., closing their shells).[44] Desire and

[43] At least, this is what he says in DA II.2. The detailed discussion of *phantasia* is somewhat more nuanced, as we will see in Chapters 8 and 10 below.

[44] This seems a reasonable inference to draw from the following pair of passages in *Parts of Animals* IV. First, at 679b26–27: "the bivalves, scallops and mussels, for instances are protected by the power they have of closing their valves." And then a little further on at 681b681b he locates "the presiding seat of sensation" in Testacea (which includes bivalves) "midway between the part by which food is taken in and the channel through which either the excrement or the spermatic fluid is voided" (681b33–682a1, all trans. W. Ogle in ROT). Surely, he thinks that the sensation is what controls the protective response. Aristotle also thought that the dividing line between plant and animal is somewhat blurry. He often mentions sea-sponges, writing in *History of Animals* I.1 that "the sponge actually appears to be endowed with a certain sensibility: as a sign of which it is alleged that the difficulty of detaching it is increased if the movement is not covertly applied" (487b10–12, trans. d'A. W. Thompson in ROT).

imagination are much more developed in animals that are capable of moving themselves (and these typically have more senses than just touch), and (although Aristotle does not say so here) it will turn out that non-human animals are capable of primitive forms of deliberation and problem-solving.

At the limit of the hierarchy we reach human beings, the only organisms that are capable of thinking, in the strict sense. It is interesting (and something to which we shall return) that Aristotle's discussion of thinking in DA II.2 seems to have two different strands. In his lists of capacities he talks about the activity of thinking using variants of the word *dianoia*. So, for example, he writes: "For now let just this much be said: the *psuchê* is the principle of the things mentioned and is delimited by them, namely, nourishment, perception, thought (*dianoêtikon*), and motion."[45] But a few lines later on he also talks about *nous* in a way that has seemed to some commentators to suggest that it is something different from *dianoia*—for example, "But concerning reason (*nous*) and the capacity for contemplation nothing is yet evident but it seems to be a different genus of *psuchê*, and this alone admits of being separated, in the way the everlasting is from the perishable."[46] As we will see in Chapter 10, it is an open question for some commentators whether this type of everlasting *nous*, in the strictest sense of the word, actually exists in the sublunary realm (as opposed to pertaining only to Aristotle's divine, unmoved mover).[47]

Table 5.1 shows how the hierarchy of capacities maps onto the organization of chapters in *De Anima*. The order of discussion in *De Anima* does not map exactly onto the hierarchy of capacities, but we will (more or less) follow Aristotle's own organization in the following chapters.

[45] DA 413b11–13, trans. Shields.
[46] DA 413b24–27, trans. Shields.
[47] For an influential formulation of this view see Burnyeat 2008, developing an interpretive tradition that goes back to Alexander of Aphrodisias and that will be discussed below in Chapter 10.

Table 5.1 How the hierarchy of capacities maps onto the organization of chapters in *De Anima*.

Nutrition/ growth/ reproduction	DA II.4		
Perception	DA II.5–III.2		
		General	DA II. 5–6
		Sight	DA II. 7
		Hearing	DA II.8
		Smell	DA II.9
		Taste	DA II.10
		Touch	DA II.11
		General	DA II.12–III.2
Imagination	DA III.3 & 10–11		
Thinking and reason	DA III.4–6		
Locomotion and desire	DA III.9–11		

Further reading

One of the best things to read as background to Aristotle's hylomorphic account of the *psuchê* is the first sections of Alexander of Aphrosidias's *De Anima* (pp. 31–54 in Caston's 1999 translation). Alexander's *De Anima* is not a commentary, but definitely articulates an Aristotelian view. Alexander was the only card-carrying Aristotelian among the ancient commentators whose works survive, but Themistius and John Philoponus are also well worth reading.

Ackrill 1972 first raised the much-discussed question of whether Aristotle's hylomorphism is consistent with his view that a body without a *psuchê* is only homonymously a body. Influential versions of the two-body hypothesis (that Aristotle talks about the body in [at least] two ways, only one of which poses problems for is hylomormphism) have been put forward in Whiting

1992 and Shields 1993. As indicated in the text, I am more persuaded by Frey 2007, which argues in effect that there is not really a problem here at all. As it happens, much of Ackrill 1972 is taken up with critically discussing a suggestion due to David Wiggins to the effect that the relation between matter and form is one of constitution. That part of Ackrill's argument seems completely successful.

Of the same vintage as Ackrill are Barnes 1971 and Sorabji 1974, which discuss the extent to which Aristotle is properly described as a physicalist. The functionalist interpretation of Aristotle's hylomorphism is clearly stated in Nussbaum and Putnam 1992 and Shields 1990 and equally clearly criticized in Burnyeat 1992 and 1995. Charles 2008 offers Aristotle a middle way between Nussbaum/Putnam and Burnyeat. Caston 2008 is not convinced. Charles expands his position in Charles 2021, particularly Chapter 2.

For a general discussion of the role of functions/capacities/faculties in Greek philosophy, see Corcilius 2015. Corcilius and Grigoric 2010 discuss whether capacities should be considered as parts of the *psuchê*. On the role that capacities play in Aristotle's project in *De Anima*, see the first five chapters of Johansen 2012.

6

Nourishment and perception

Focus Texts *De Anima* II.3–6

In DA II.4, Aristotle turns to the main business of the *De Anima*. As we saw in Chapter 5, the official account of the *psuchê* as, in effect, the form of the body is not the end of the story, but rather an invitation to explore the various capacities that make the difference between having life potentially and the characteristic activities of living and flourishing organisms. DA II.2 has explained why we need to go beyond the official account and, taking as its guiding idea that *psuchê* is the principle of life, sketched out a version of the hierarchy of capacities. The scene is set to start the detailed analyses of individual capacities that will take up the remainder of the book, beginning in DA II.4 with nourishment and generation.

First, though, comes DA II.3, which is a relatively short transitional chapter. Aristotle goes into more detail on the structure of the hierarchy, employing another complicated geometrical analogy to explain how the capacities are related to each other. This analogy should be read in conjunction with some comments in DA II.2 on the question of whether the capacities of the *psuchê* are separable. We will look at both passages in Section 6.1, before turning in Section 6.2 to the plan of attack for studying individual capacities that Aristotle sketches out at the beginning of DA II.4, and then in Section 6.3 to the discussion of nourishment and generation in DA II.4.

In DA II.5 Aristotle turns to perception, the capacity to which he devotes the greatest number of chapters in *De* Anima. He develops there a complicated and much-discussed account of how the perceiving subject is changed in the act of perception. Section 6.4

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introduces some of the key issues, while Section 6.5 explores the discussion of the objects of perception in DA II.6 and introduces Aristotle's distinctive perceptual realism.

6.1 The structure of the hierarchy

DA II.3 opens with a more or less definitive list of the capacities that collectively make up the *psuchê*:

> Among the capacities of the *psuchê*, all belong to some, to others some of them belong, and to still others only one belongs. The capacities we mentioned were: the nutritive faculty, the perceptual faculty, the desiderative faculty, the faculty of motion with respect to place, and the faculty of understanding. The nutritive faculty alone belongs to plants.[1]

In a slightly different ordering (that reflects his own progression in the book) he refers to

> the nutritive faculty
> the perceptual faculty
> the desiderative faculty
> the faculty of understanding, or reason
> the faculty of motion with respect to place

We will come back in Section 6.2 to the details of his terminology, and to what the relation is between a faculty and a capacity. For the moment, the important point is that all but one of the capacities in the ordering can exist in the absence of those above it in the hierarchy just laid out. Plants receive nourishment and reproduce, but neither perceive nor desire. Sessile animals such as sea urchins can

[1] DA II.3 414a29–32, trans. Shields.

perceive but not move, while no non-human animals can possess the faculty of understanding.

The notable exception is perception. In the first paragraph of DA II.3, Aristotle argues (with some plausibility) that any perceiver is *ipso facto* a desirer. He offers a somewhat compressed general argument, which is then expanded through a very specific elucidation of the key premise. The general argument begins by observing that the objects of perception include what is pleasant and what is painful. The discussion is very concise, but his point, I think, is that perception is not affectively neutral. It has what modern psychologists would call an affective valence. The valence a thing has for a perceiver is a function of how it is perceived. Some things are perceived as pleasant and others as painful. Part of what it is to perceive something as pleasant is to be attracted to it. *Pari passu*, part of what it is to perceive something as painful is to want to avoid it. Attraction and avoidance are forms of desire. So, he concludes that there can be no perception without desire

Aristotle's claim is actually pretty strong. He is making the modal claim that perception cannot exist without desire, and so one might reasonably ask what evidence he has for saying that perception *has to be* affectively valenced. To his credit, he has an answer to this question.[2] The key point he makes is that the sense of touch, which he takes to be the most basic perceptual modality, shared by all perceivers, is the direct perception of what is nourishing (and, presumably, of what is not nourishing). This is because things either nourish or fail to nourish to the extent that they are appropriate combinations of the dry, the wet, the hot, and the cold, and these are, in the last analysis, the direct objects of the sense of touch (to be discussed further in the next chapter).

[2] Aquinas sees the structure of the argument much as described above. See his commentary (Pasnau 1999) at p. 155. Shields, in contrast, thinks that the line of argument I am about to outline is little more than a reaffirmation of the general argument. See *his* commentary at p. 194.

With the exception of perception, therefore, each of the capacities is separable from those above it in the hierarchy (and perception is, of course, separable from understanding). So why then does Aristotle confidently assert in DA II.2 that "it is evident from these things, though, that the remaining parts of the *psuchê* are not separable"?[3] Well, 'separable' can be said in many ways. We might distinguish within the hierarchy two kinds of separability. Every capacity is *upward* separable from the capacities above it (modulo the close connection between perception and desire), but what Aristotle is denying to be generally possible in this passage is that capacities can be *downward* separable from those below them in the hierarchy. Where there is desire there is perception, and where there is perception there is nutrition and generation. The only possible exception (to which we shall return in Chapter 9) is *nous*, the faculty of reason.

Aristotle proposes an intriguing analogy to explain the failure of downward separability. He suggests that the capacities of the *psuchê* can be usefully compared to figures (mathematical shapes) in (at least) three senses. First, there is no more to the *psuchê* as a whole than all the capacities that make it up, just as there is no more to figure than all the individual figures (triangle, quadrilateral, pentagon, hexagon, etc.). This is an interesting and neglected aspect of Aristotle's thinking on the *psuchê*. Many post-Cartesian thinkers would say that there is something (a self, a subject) that in some sense "has" the various psychic capacities. "I am a thing that thinks," as Descartes famously wrote. Aristotle is going in a different direction. The capacities are all that there are. For that reason (and this is the second point), while there is a general account (*logos koinos*) of both shape and *psuchê*, investigating it is not the best way to investigate either of them. Aristotle's discussion here is compressed and potentially confusing. He writes:

[3] DA II.2 413b27–28, trans. Shields.

> There could, however, in the case of figures be a common account which fits them all, though it will be peculiar to none; and the same holds in the case of the *psuchai* mentioned. For this reason (*dio*) it is ludicrous to seek a common account in these cases, or in other cases, an account which is not peculiar to anything which exists, and which does not correspond to any proper and indivisible species, while neglecting what is of this sort. Consequently, one must ask individually what the *psuchê* of each is, for example, what the *psuchê* of a plant is, and what the *psuchê* of a man or beast is.[4]

The "there could be" (*genoito an*) in the first sentence should not be read as implying any skepticism about the existence of a common account. Aristotle cannot be skeptical, since he has just given three different versions of a common account of the *psuchê* in DA II.1 (and it would be easy enough to come up with a common account of figure—e.g., as what is enclosed by one or more lines). What is "ludicrous" is not pursuing the common account, but rather pursuing it to the exclusion of investigating the individual capacities/figures.[5]

The third point of comparison is both more opaque and more suggestive. He writes:

> for in the case of both figures and ensouled things (*tôn empsuchôn*) what is prior is always present potentially in what follows in a series—for example, the triangle in the square and the nutritive faculty in the perceptual faculty.[6]

[4] DA II.3 414b23–28, trans. Shields (with some transposition of Ross's text).

[5] We might, then, take the verb zêtein in the sense of 'require' or 'demand' (see LSJ I.5), as opposed to the more standard sense of 'seek'. Compare Philoponus: "it is ridiculous to be satisfied by the common account alone, and let go of what is peculiar to each" (257, 14–15, in Charlton 2005a at p. 60).

[6] DA II.3 414b29–32.

It is relatively straightforward to see how what is prior can be present potentially in what follows when it comes to figures. Aristotle is considering a series of figures in which each figure has one fewer side than its successor—triangle, rectangle, pentagon, and so on. To see what is going on, consider the hexagon illustrated in Figure 6.1.

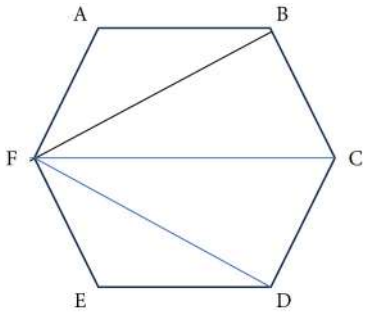

Figure 6.1 Figures existing potentially within a hexagon.

Each of the earlier figures in the series exists potentially in the hexagon in the sense that it can be extracted from it. Drawing a line from F to B creates the pentagon FBCDE; from F to C creates the quadrilaterals FABC; from F to D the triangle FDE.[7]

But does anything like this apply in the case of the *psuchê*? In one sense it does. We speak, for example, of people being in a persistent vegetative state, when they have lost their perceptual faculties and capacity to reason. All that remains are the nutritive capacities. Similarly, a person with advanced dementia might possess nutritive and perceptual capacities, but not the capacity for reason. So, it is possible (through some sort of catastrophic event) for the lower capacities to be extracted from the complete organism.

[7] More generally, where X is an *n*-sided figure, drawing a line between two vertices separated by *m* vertices yields a figure with *n*–*m* sides.

But there is a fundamental disanalogy. A triangle is a triangle. There is no real difference between the triangle that is the first figure in the series and a triangle that has been extracted from a rectangle by drawing a line between two opposing corners, or a triangle extracted from the hexagon. In contrast, the perceptual capacities of a sessile animal are typically very different from those of a mobile animal, and different again from those of a rational animal. This is not just a difference in the number of perceptual modalities (with sessile animals typically only possessing the sense of touch). There are differences within modalities. The visual capacities of a dog are very different from those of a human infant, which are different again from those of an adult human being. Different levels of overall cognitive sophistication are directly reflected in what contemporary philosophers call the content of perception. Arguably, what my cats see when they look at a copy of *De Anima* is very different from what I see—and different again from what the fly coming in to land on it sees. At any rate, something like that seems to have been Aristotle's own view, to which we shall return in the context of imagination (*phantasia*) in Chapters 8 and 10.

For these and other reasons, it would be a fundamental mistake to think of Aristotle's hierarchy of capacities as if there were a monolithic nutritive capacity, common to all living things, onto which in every animal there is grafted the sense of touch, accompanied in most other species by a set of perceptual modalities appropriate for that animal's lifestyle and functioning—with some special animals (normal, properly functioning human beings) also possessing the capacity for reason. The capacities are not fixed, determinate, and constant across species. Each capacity presents and manifests itself differently depending on how the organism exercising it has to function on its environment and on any other, higher capacities that the organism might have.

As emerged in Section 5.5, Aristotle views his official account of the *psuchê* as being the beginning of the inquiry, rather than its end. As he puts it in DA II.2, to say that the *psuchê* is the substance

as form of a natural body that has life in potentiality is to state the "that," but not to give the cause. In order to give the cause, Aristotle needs to elucidate the basic idea of the form of a natural body, which of course he does through elucidating the hierarchy of the capacities. But it is important to realize (although Aristotle does not say so explicitly) that the accounts of the individual capacities can also be described as stating the "that," but not giving the cause. They also invite further investigation. The difference is that with this further investigation we have now arrived at the domain of true natural philosophers, as carried out by those whom we would now call biologists and psychologists.

There is a tendency in discussions of Aristotle to reify and nominalize the individual capacities by describing them as individual "souls" —the "nutritive soul," the "perceptual soul," and so on. This is unfortunate, because it obscures the fact that the manifestations of the psychic capacities are highly variable across and within different species, as a function both of what we would now call ecosystem and of a particular organism's level of cognitive sophistication. There is *some* foundation for this terminology in the *De Anima*, but really not very much. There are relatively few places in the text where Aristotle, writing *in propria persona*, uses the expression "the F *psuchê*" where F is an adjective picking out one of the capacities. In DA II.4, for example, he refers to the nutritive (*threptikê*) *psuchê* at 415a23–24 and to the generative (*gennêtikê*) *psuchê* at 416b25.[8] There are a couple of other places where Aristotle seems to refer to an individual *psuchê*. At 416b20–23, for example, he refers to that which nourishes as the first *psuchê*, but it is worth noting that Philoponus's discussion of this passage ignores Aristotle's own phrasing and refers instead to the first power of the *psuchê*.[9] It would probably be unwise to place too much weight on these usages.

[8] At 429a28 Aristotle refers to the thinking (*noêtikê*) *psuchê*, but he is discussing the Platonic view, rather than his own.

[9] Philoponus 287, 7 (in Charlton 2005a at p. 93). See also the mention of the *dianoêtikê psuchê* at 431a15 in the textually troubled DA III.7.

A final preliminary point, following on from these. While Aristotle proposes elucidating the *psuchê* through the hierarchy of capacities, his project is not a reductive one. He is not, in other words, analyzing the *psuchê* as simply an extensional aggregate (a set) of biological and psychological capacities. For Aristotle, as an integral part of his teleology, the organism is primary, and consequently we need to understand the individual capacities on their own terms, to be sure, but also in terms of how they contribute jointly and severally to the organism's overall functioning and flourishing.

6.2 The plan of attack

Aristotle spells out how he proposes to study the individual capacities at the beginning of DA II.4. He makes two points:

- capacities are to be understood through their exercise, and
- understanding the exercise of the capacities requires understanding their objects.

The first point reflects a general Aristotelian principle, which is that actuality is prior to potentiality in the order of explanation. In Molière's play *Le Bourgeois Gentilhomme*, a learned Aristotelian explains that opium causes sleep because of its dormitive powers. Molière gets the direction of explanation wrong. For Aristotle, we cannot understand a capacity without understanding what goes on when it is exercised. Studying how opium actually brings about sleep reveals the mechanisms (the efficient causes) underlying those effects. It is only to the extent that we have such a causal understanding that appeal to explanatory capacities is informative rather than vacuous (as Molière implied).

It is interesting in this context that Aristotle's general term for a capacity is *dunamis*, which is also the word he uses for *potentiality*.

Likewise, when he discusses the activities that occur when a capacity is exercised, the term he typically uses is *energeia*, which is the word standardly translated as *actuality*. In other words, where in English we would have two completely separate contrasts (between a capacity and its exercises, and between potentiality and actuality), in Aristotle's Greek there is just one (between *dunamis* and *energeia*).

The second point (that the exercise of a capacity requires understanding its objects) is a natural extension of the first in the context of Aristotle's teleology. In order to understand what is going on when a capacity is exercised, we need to understand what the purpose of that activity is, which we cannot do unless we understand what its objects are. Perception exists, for example, in order to detect certain features of the environment and so to explain how it works we need to know what those features are. Do we see Socrates as a living, breathing individual with a history and a social significance? Or do we see appropriately shaped colored surfaces that are subsequently interpreted as being Socrates by fundamentally nonperceptual processes? An account of the mechanisms of perception will be very different in the two cases.

The plan of attack, therefore, is to elucidate a capacity through its exercise, which in turn is explained through its objects. In order to apply this plan of attack, Aristotle develops a terminological framework that he applies fairly consistently through the second and third books of *De Anima*. Aristotle gives a name to the activity involved in the exercise of each capacity. So, for example, perception is the activity associated with the perceptual capacity. The name of the activity is *aisthêsis*, which is derived from the verb *aisthanesthai*, to perceive. The object of the capacity is named by a noun derived from the neuter of the verbal adjective.[10] So, the

[10] In fact, there are two verbal adjectives. This is the one that ends in *–tos* and denotes either the possibility of doing something (e.g., that an object can be perceived) or that something has been done (e.g., that an object has been perceived). See Smyth 1956, §472.

Table 6.1 Aristotle's framework for studying the capacities of the *psuchê*.

	Nutrition	**Perception**	**Desire**	**Locomotion**	**Thinking**
Verb	*trephein* (to nourish)	*aisthanesthai* (to perceive)	*oregesthai* (to desire)	*kinein* (to move)	*noein* (to think/ reason)
Activity	*trophê* (nourishment)	*aisthêsis* (perception)	*orexis* (desire)	*kinêsis* (motion)	*noêsis* (thinking/ reasoning)
Object	*to trephon* (what is nourishing/ can nourish)	*to aisthêton* (what is being/can be perceived)	*to orekton* (what is being/can be desired)	n/a	*to noêton* (what is being/ can be thought)
Capacity	*to threptikon OR ê threptikê psuchê*	*to aisthêtikon*	*to orektikon*	*to kinêtikon*	*to noêtikon OR nous*

object of perception is *to aisthêton*, which in this context typically means 'the thing that can be perceived.' Finally, Aristotle derives the name of the actual capacity from the neuter of an adjective derived from adding the suffix *-ikos* to the verbal adjective. So, the capacity of perception is *to aisthêtikon*.

Table 6.1 shows how Aristotle applies this framework consistently to the principal capacities of the *psuchê*. In Section 6.3 we will look at how he applies this framework to the most primitive capacity—the capacity for nutrition—before turning to perception in Section 6.4.

6.3 Nutrition and generation

De Anima II.4 is a rich, but also somewhat disconnected, chapter. After opening with some methodological observations discussed

above, Aristotle discusses nutrition and generation as activities of the *psuchê*. He explores the objects of nutrition and also has some things to say about its mechanisms (i.e., the processes of digestion), as well as offering passing criticisms of earlier accounts of growth by Empedocles and some unnamed others, who may include Heraclitus. He also, without much explanation, treats nutrition and generation (i.e., reproduction) as two dimensions of a single capacity, which he at times calls the nutritive capacity and at others the generative capacity.

For many readers, the most significant exegetical challenge of DA II.4 is to explain why Aristotle states that "the same capacity of *psuchê* is both nutritive and generative."[11] Why does he assimilate nutrition and generation, which seem at first blush to be distinct capacities—and which, moreover, do not even coincide in extension, because Aristotle believes there to be self-generating organisms that nourish themselves?

One explanation suggested by the focus on teleology is that Aristotle assimilates nutrition and generation because they serve a single teleological function. The problem with this approach is that Aristotle seems to identify distinct teleological functions for generation and for nutrition. Here is what he has to say about generation:

> For the most natural among the functions belonging to living things, at least those which are complete and neither deformed or spontaneously generated, is this: to make another such as itself, an animal an animal, a plant a plant, so that it may, insofar as it is able, partake of the everlasting and the divine.[12]

But this is not, of course, applicable to nutrition. And in fact, Aristotle seems very clearly to distinguish between the function of nutrition and the function of generation in the following

[11] DA II.4 416a19, trans. Shields.
[12] DA II.4 415a26–415b1, trans. Shields.

passage: "Consequently, this principle [i.e. generation] of the *psuchê* is a capacity of the sort which preserves the thing which has it, as the sort of thing it is, while nutrition equips it to be active."[13] The *men*…*de* construction, captured in the translation with "while," clearly indicates a contrast.

Some commentators have tried to identify a single over-arching function served by both nutrition and generation. Ross is a case in point, suggesting that both count as forms of self-preservation—nutrition obviously so, and generation derivatively, since it produces a being that is like the parent.[14] However, if we take the object of generation to be the progeny, while the object of nutrition is the self, then it would seem by Aristotle's own lights that they must be different capacities, given his insistence on individuating capacities in terms of their objects. The only way to get around this, while holding on to the idea that the common function is self-preservation, is to argue that the self is in some non-metaphorical sense the object of generation. That does seem something of a stretch.

Still, there is a more promising way of hanging onto the idea of a common function for nutrition and generation. The idea that both involve some sort of preservation remains key, but we need to step back from the idea of *self*-preservation and instead think more critically about the objects of nutrition and generation.

A good place to start is with some very interesting things that Aristotle says about growth and nutrition. He is discussing the view (often identified with Heraclitus) that fire is the cause of both nutrition and growth, on the grounds that it is the only type of body that both grows and is nourished. There is some merit in this view, he thinks—after all, nutrition requires digestion, which involves heat. But it cannot possibly be the whole story, for the following reason:

[13] DA II.4 416b17–19, trans. Shields
[14] Ross 1961, p. 228. Compare Shields's commentary at p. 201.

> It is, however, a sort of co-cause (*sunaition*), and most surely not a cause without qualification; the cause is, rather, the *psuchê*. For fire's growth is without limit, so long as there is something combustible. By contrast, for all things naturally constituted, there is a limit (*peras*) and an organization (*logos*) of both size and growth. These things belong to the *psuchê*, and not to fire, and to the organization (*logos*) rather than to the matter (*hulê*).[15]

Aristotle's idea is that nutrition develops and preserves an organism *qua* substance—that is to say, *qua* organized body exercising the appropriate capacities. It does not merely add bulk in the way that a pile of sand might grow as more sand is added.

One very interesting feature of this passage is the contrast drawn at the end between organization (*logos*) and matter (*hulê*). As discussed in Chapters 4 and 5, *logos* is one of the cluster of concepts that Aristotle uses to characterize his notion of form, and as the explicit contrast with matter makes clear, Aristotle is really saying that nutrition develops and preserves the *form* of the organism. In other words, there is a fundamental sense in which the object of nutrition is the form of the organism.

Aristotle does not share many details in *De Anima* of his theory of generation, which is discussed primarily in *De Generatione Animalium*. But he does make a very suggestive comment in the continuation of the passage quoted above where he states that generation allows mortal plants and animals to partake of the everlasting and divine. What happens in generation is that perishable things are preserved in form, but not in number:

> Since, then, these things are incapable of sharing in the everlasting and divine by existing continuously (because among perishable things nothing can remain the same and one in number), each has a share insofar as it is able to partake in this, some more

[15] DA II.4 416a13–18, trans. Shields.

> and some less, and remains not itself but such as it is, not one in number but one in form.[16]

In other words, what is preserved in generation is the form of the organism. This is entirely consistent with the analysis in *De Generatione Animalium*, where Aristotle offers a complicated account of reproduction and heredity in terms of the reception of (male) form by (female) matter.

This gives a very clear sense in which the object of generation is the same as the object of nutrition. Both develop and preserve the form of the organism. That seems to offer a clear explanation of why Aristotle thinks that nutrition and generation are different ways of exercising a single capacity. It also explains something that is not immediately obvious in the text of DA II.4, namely, how the discussion in the main part of the chapter actually exemplifies the methodological framework with which it opens. Aristotle does what he says he will do. He explains the two capacities through their exercise and then, by elucidating their objects, he shows that they are really two sides of a single capacity.

6.4 Perception, motion, and alteration

In DA II.5, Aristotle turns to perception (*aisthêsis*), which is the next level in the hierarchy of capacities. The discussion of perception occupies the largest single block of text in the *De Anima*'s treatment of the capacities of the *psuchê*. After DA II.5 and DA II.6, which discuss perception in general, Aristotle turns to the study of the individual senses in DA II.7 through DA II.11, before returning to perception in general in DA II.12 and DA III.1–2. DA III.3 transitions to imagination (*phantasia*), which is closely related to perception.

[16] DA II.4 415b3–7, trans. Shields.

DA II.5 and DA II.6 are transitional, but highly important. DA II.5 in particular is somewhat abstruse and has inspired considerable scholarly debate. It is not at all obvious what Aristotle is trying to do here. Much of the chapter is devoted to discussing the seemingly obscure question of how and why perception counts as a way of being altered: In what way are perceivers altered when they perceive things? This is a subtle question that does not loom large in contemporary philosophy of perception, at least not in the way that Aristotle explores it. Moreover, it is not at all obvious what it has to do with his general approach of studying capacities through their exercise and their objects. In short, DA II.5 looks somewhat of an outlier in Aristotle's discussion of perception.

Still, turning to the following chapter suggests that DA II.5 may not be as much of an outlier as initially appears. This is because there Aristotle does exactly what one would expect him to do, given the methodological discussion in DA II.4 and the fact that he is about to start discussing the individual senses. In DA II.6, Aristotle discusses the objects of the individual senses, making a distinction between the special sensibles (such as color and sound) that are proper to individual senses (vision and hearing) and the common sensibles, which can be the object of multiple senses. In other words, DA II.6 implements the second part of Aristotle's two-part methodology. This raises the question: Is there a way of reading DA II.5 on which it implements the first part of the methodology?

Here is one possibility. Both DA II.5 and DA II.6 pave the way for the discussion of the individual senses. DA II.6 does so by providing a conceptual framework for thinking about the objects of the individual senses. DA II.5 does so by providing a conceptual framework for thinking about what it is in general for a perceptual capacity to be exercised. The frameworks developed in these two chapters are then applied to the individual senses in DA II.7–11 and subsequently combined to give an overarching account of perception in DA II.12.

The key move Aristotle makes in DA II.5 is to apply to perception the explanatory tools provided by the potentiality/actuality distinction. Characteristically, he approaches the matter through a puzzle (*aporia*), originating in two questions. Why, he asks, do the senses not perceive themselves? And why do the senses require external objects to generate perceptions?

> There is a puzzle as to why there is no perception of the senses themselves, and why they do not produce perception without external causes, even though present in them are fire, earth, and the other elements of which there is perception either in themselves or in respect of their co-incidental properties.[17]

There is, Aristotle thinks, a single answer to both questions. The perceptual faculty requires external objects in order to function. The visual system cannot normally be an external object to itself (without some complicated arrangement of mirrors, which would still not yield perception of vision *per se*). The basic point is fairly obvious. What is interesting is how Aristotle frames it:

> It is clear, then, that the perceptual faculty is not actual, but only in potentiality; for this reason it does not perceive, just as what is combustible does not burn by itself without something capable of burning it. For otherwise it would burn itself, and would have no need of any actually existing fire.[18]

The role of the external object in the process of perception is to transition the perceptual faculty from a state of potentiality to a state of actuality. The word 'transition' is useful here because of its

[17] DA II.5 417a2–6, trans. Shields.

[18] DA II.5 417a6–9, trans. Shields. The phrase *estin energeia(i)* that Shields translates as 'is actual' might perhaps be better rendered as 'exists in actuality,' taking *estin* to be existential, rather than predicative (Smyth 1956, §187b), consistent with the accentuation, and heeding the dative.

complete lack of theoretical baggage. One of the key tasks of DA II.5 is to explain in general terms what this 'transition' amounts to.

There are two separate questions here, although they are very closely intertwined in Aristotle's discussion. First, how should we think about the states of potentiality and actuality involved in perception? And second, what exactly is involved in the transition from potentiality to actuality in perception? Both of these questions have received discussion and commentary so extensive that we can barely scratch the surface here.

The first question is actually the most tractable, because Aristotle offers a very interesting and plausible discussion of different levels of potentiality/actuality in the abstract, which he then applies to the particular case of perception. As in the somewhat parallel (but considerably more elliptical) discussion in DA II.1, Aristotle's preferred example for thinking about potentiality and actuality is the acquisition of knowledge.[19] There are, he thinks, two different transitions involved in the move from potentiality to actuality when knowledge is acquired.

The most basic transition is from being abstractly capable of learning to acquiring knowledge through instruction (or presumably, although he does not discuss it here, through learning and exploration). The precondition here, of course, is that the (potential) knower should have the basic cognitive and sensory capacities to come to know something. As Aristotle puts it, this is the sense in which "something is a knower in the way in which we might say that a human being knows because humans belong to the class of knowers and to those things which have knowledge."[20] This is a function of the (potential) knower's genus and matter being of a certain sort, as he goes on to say. He is plausibly interpreted as using 'genus' (*genos*) in the sense of 'form,' so that this parenthetical comment adds up to the plausible idea that an organism must be at

[19] For the earlier discussion see DA II.1 412a22–27.
[20] DA II.5 417a23–24.

the right stage of development before it can count as a knower—the matter must be configured in the appropriate way.[21]

This is the basic level of potentiality for Aristotle, and so the first shift or transition toward actuality occurs when a knower comes to know—when someone acquires a basic knowledge of grammar, to take one of Aristotle's stock examples. This is the level that Aristotle characterized as the first level of actuality when he gave his official account of the *psuchê* back in DA II.1. In DA II.5 he does not use that expression, but rather prefers to distinguish two levels of potentiality. Nothing appears to hang on the terminology. The important point, whether the possessor of grammatical knowledge is described as being at the second level of potentiality or the first level of actuality, is that such a person has not yet achieved the highest level of actuality, which occurs only when her grammatical knowledge is actually being exercised.

The three levels (and two different sets of labels) are represented in Table 6.2. Both transitions (from level I to level II and from II to III) are instances of what Aristotle calls alteration (*alloiôsis*). This is a generic term that covers a variety of different ways in which a thing can change. Aristotle's discussion of alteration in DA II.5 is somewhat obscure and not helped by challenges with the text. But it is possible to get a tolerably clear understanding of the basic contrast that he is trying to draw.[22]

[21] This means that, strictly speaking, an infant is not a potential knower of geometry, although it has the potential to become such a knower. For Aristotle, the relation *x*-has-the-potential-to-become-*y* is not transitive.

[22] Matters are not helped by the fact that it is not completely clear that Aristotle consistently wants to describe them both as alterations. He does seem say at 416b34 that perception is a kind of alteration (*alloiôsis tis*), but it has been argued (by Buryneat in his 2002 at pp. 36–37) that this phrase should actually be translated as 'alteration of a kind' (i.e., not really an alteration at all). This is consistent with discussions of alteration elsewhere in the corpus (e.g., *Physics* VII.3). Further on in the chapter he characterizes the conclusion he is trying to derive as being either that perception is not an alteration, or that there are two types of alteration (see at 417b5–9, for example). The safest strategy for present purposes might be just to focus on the contrast and sidestep the question of

Table 6.2 Varieties of potentiality and actuality

	DA II.1	DA II.5	
I	First potentiality	Potentiality	• Being cognitively capable of acquiring knowledge • Having the capacity to acquire knowledge
II	Second potentiality	First actuality	• Possessing knowledge but not using it • Having the capacity to exercise the knowledge one possesses
III	Actuality	Second actuality	• Actually exercising the knowledge one possesses • Actualizing the capacity for grammatical knowledge

One fundamental type of change is qualitative change, which occurs when a thing acquires a new quality, as when a brick house is painted white, for example. Aristotle analyzes this type of qualitative change in terms of contraries (qualities that cannot both be present in the same thing at the same time, although they can both be absent). Change occurs when one quality is replaced by a contrary quality—when, for example, the mud color of the bricks is replaced by the white color of the paint. Aristotle describes this as "a kind of destruction by a contrary."[23]

Although the relevant passages are not very clear, Aristotle seems to be saying that the first kind of transition (from first potentiality to second potentiality, or from potentiality to first actuality) is really a type of qualitative change. The (potential) knower goes from possessing the quality of being ignorant to possessing its contrary,

what counts as an alteration—on which, though, the discussion in Shields's commentary at pp. 217–219 is particularly helpful.

[23] DA II.5 417b2–3, trans. Shields.

the quality of having knowledge. Aristotle recognizes that this is somewhat different from what happens when a mud-colored wall is being painted white. He has the following to say about teaching and learning:

> the one who, from being in potentiality, learns and receives knowledge from one who is in actuality, and able to teach, either should not be said to be affected, or there are two types of alteration, one a change towards conditions of privation and the other towards positive states and a thing's nature.[24]

Characteristically, Aristotle is guarded and offers two options. But given that he describes learning in terms of changes from a state to its contrary at various places (e.g., at 417a31), we should probably take the second option. When a potential knower comes to know, she is indeed altered and moves from a state to its contrary. But this is different from most cases of qualitative change, because the two states can only be specified in terms of each other. Knowledge is defined as the absence of ignorance and ignorance as the absence of knowledge. In contrast, we can fully understand what it is for something to be mud-colored without making any reference to the color white, and vice versa.

The important contrast, though, is not between two types of qualitative change, but rather between qualitative change, on the one hand, and the transition from second potentiality (or first actuality) to (second) actuality, on the other. This second transition is not a transition from a state to its contrary, for the simple reason that actualizing one's potential for grammatical knowledge does not eliminate the potentiality. Nothing can simultaneously be in two contrary states, or possess two contrary properties. However, it is obvious that possessing knowledge is a precondition of exercising

[24] DA II.5 417b12–16, trans. Shields.

knowledge, rather than being in opposition to it, because exercising knowledge does not require one to stop possessing it.

One reason this is important is that Aristotle clearly states that there is no analog in perception of level 1 potentiality. Animals do not start in a state of potentiality from which they learn to be perceivers. Part of what it is to be an animal is to come into the world already capable of perceiving. Even rabbits, which are born with their eyes and ears closed, have the sense of touch. So, this means that perception has to be understood as a transition from level II to level III, rather than as an instance of either of the two types of qualitative change just discussed. This in turn places important constraints on the form that an account of perception will have to take, for two reasons.

First, second potentialities/first actualities are not actualized automatically, as it were—they can only be exercised when the appropriate conditions are in place. Some of these conditions are *enabling* conditions. They are background factors that must hold for it even to be possible to exercise the capacity. Nobody who is not awake, for example, can fully exercise their grammatical knowledge, nor can anyone see in the dark (without technological assistance). Others are what might be termed *triggering conditions*. These are the conditions that precipitate the exercise of a capacity. Wrestlers can only exercise their capacities for attack and defense in response to the movements of an opponent, for example.

Secondly, not every behavior or activity that looks as if it might reflect the actualization of a second potentiality/first actuality really is so. It is obvious that the proverbial monkey at the typewriter is not exercising a capacity to write plays, but there are many more subtle examples of such a mismatch. Aristotle's *Nicomachean Ethics* is full of examples of how people can behave in ways that mimic ethical dispositions without properly counting as exercises of the relevant capacity. In Book III of that work, for example, he discusses five different ways in which people can appear to the untrained eye to be exercising courage without really doing so. These

are typically cases where the pseudo-courageous person behaves in ways that a genuinely courageous person wouldn't. Someone who is foolhardy, for example, can display an inappropriate lack of concern for self-preservation. But it is also important to Aristotle that there are cases when someone can act a way that exactly matches the actions of someone who is exercising the capacity without themselves exercising the relevant capacity. This is an important part of ethical education. Part of what it is to learn to be courageous is to perform courageous actions in the circumstances in which a courageous person would perform them—and for the reasons that a courageous person would perform them. Eventually the courageous response becomes second nature and the appropriate reasons and dispositions are internalized.

To draw together the threads of the discussion, therefore, DA II.5 plays a crucial role in Aristotle's discussion of perception because it sets out a theoretical framework for understanding what it is for a perceptual capacity to be exercised. Aristotle is very clear that perception is not a qualitative change, but rather a transition from level II (second potentiality or first actuality) to level III (actuality or second actuality). This has several important consequences. In particular:

- The fact that perception is the actualization of a second potentiality/first actuality means that we need to understand, for perception in general and for each perceptual modality in particular, what the enabling and triggering conditions are, and how they combine to make perception possible.
- Among the triggering conditions of perception are the objects of perception, and so we need to understand what these are, for perception in general.
- Identifying the triggering and enabling conditions of perception will help to distinguish it from a cluster of related phenomena, including those that fall under the general heading of imagination (*phantasia*).

In sum, the discussion in DA II.5 actually sits rather well with the methodology that Aristotle announced in the preceding chapter. In DA II.4 he said that we need to analyze capacities through understanding their exercise. In DA II.5 he fleshes that out, by providing a high-level analysis of what it is for a perceptual capacity to be exercised. The next step in implementing the general methodology is to understand the objects of perception. This is what he does in DA II.6, to which we now turn.

6.5 The objects of perception

DA II.6 is one of the shortest chapters in *De Anima*. It is also very clearly structured. Aristotle makes two distinctions in order to develop a three-way classification of the objects of perception. The distinctions and the resulting classification are less simple than they initially appear, however. This section will focus on two topics in particular. First, it explores how the distinction Aristotle makes between two types of sensible quality relates to the modern distinction between primary and secondary qualities. Second, we will look at how comprehensive Aristotle's distinction is—asking, in particular, where ordinary, three-dimensional objects fit into it.

The expression 'object of perception' translates the Greek *to aisthêton*, which literally means 'the thing that can be perceived' or 'the thing that has been perceived.'[25] The English word 'object' is potentially misleading, as Aristotle identifies three different types of thing that can be perceived, only one of which includes objects strictly speaking (i.e., things that fall within the general category of substance). The other two types of thing that can be perceived are qualities rather than objects.

The first distinction that Aristotle makes is between things that are perceived in their own right (*kath' hauta*) and things that are

[25] See note 11 above.

perceived coincidentally (*kata sumbebêkos*). The second of these is clearer than the first. Aristotle does not explicitly define in DA II.6 what he means by coincident perception, but we can extrapolate from his comments on what it is to be moved coincidentally in DA I.3. Something is moved coincidentally if it does not move itself but instead moves in virtue of something else moving. (This, of course, is how the *psuchê* itself moves.) So, we can infer that something is perceived coincidentally (*kata sumbebêkos*) if it is perceived in virtue of something else being perceived—and, by extension, that something is perceived in its own right (*kath hauta*) if it is *not* perceived in virtue of something else being perceived.

In DA II.6 Aristotle only discusses sensible qualities as things that are perceived, and this is where he makes his second distinction, which is standardly described as being between proper sensibles and common sensibles. *Proper sensibles* are sensible qualities that can only be perceived by one sense. These include color, sound, flavor, and the various qualities detected by touch. In contrast, *common sensibles*, such as motion, rest, number, shape, and magnitude, can be perceived by more than one sense.[26] Aristotle makes two specific claims about the proper sensibles. First, they are perceived in ways that are immune to certain kinds of error. And second, the essence of each sensory modality has to be understood relative to the proper sensibles that it is the job of that modality to perceive. We will return to both of these.

From a purely extensional point of view, Aristotle's distinction between proper sensibles and common sensibles maps fairly closely onto the distinction between primary qualities and secondary qualities. Unsurprisingly, though, since the primary/secondary quality distinction was developed in the early modern period as an explicit reaction against contemporary modes of Aristotelianism, the two

[26] Aristotle does seem to say at 418a19 that common sensibles can be perceived by every sense, but that cannot be his considered view. How could shape be perceived by the sense of smell, for example?

distinctions turn out to reflect radically different ways of thinking about sensible qualities and how they are perceived.

A first, and very significant, point of difference is that those philosophers in the early modern period who developed the primary/secondary quality distinction (and many of their modern descendants) are *anti-realists* about the secondary qualities. John Locke is the most celebrated example. For Locke, qualities are powers to produce ideas. The primary qualities have a fundamental grounding in reality. That is to say, they are powers that objects have to produce ideas, that in some sense correctly represent the ways that objects really are. Objects really have shapes, magnitude, number, and so forth. But they do not really have colors, tastes, smells, and the other secondary qualities. As Locke famously put it in the *Essay Concerning Human Understanding*, secondary qualities are "nothing in the Objects themselves, but Powers to produce various Sensations in us by their primary Qualities, i.e., by the Bulk, Figure, Texture and Motion of their insensible parts."[27] In sum, our ideas of primary qualities represent properties that objects really have, whereas ideas of secondary qualities are nonveridical, because objects in the world do not have colors, tastes, smells, and so on.

Aristotle does not accept any such ontological asymmetry. Colors and smells do not have a lesser ontological status than shape and magnitude. This is not for him simply a point about our experience of the world. Aristotle is not saying that what Wilfred Sellars was to call the manifest image of the world contains proper sensibles—that we, as perceiving human subjects, are somehow constrained to see colors, hear sounds, and so forth. He is making precisely the claim that Locke denies, which is a claim about the scientific image. Colors, tastes, and smells are basic constituents of the world, no less real than sizes and shapes. And we perceive objects as colored and

[27] *Essay* 2.8.10.

as smelling and tasting in certain ways, because they really do have those colors, smells, and tastes. To put the point using Locke's terminology, an object has the power to produce an idea of yellow because it really is yellow. When conditions are right and everything is working as it should, an object's yellowness causes the perceiver to perceive yellow.[28]

In fact, Mark A. Johnstone has plausibly suggested that Aristotle has a very distinctive way of thinking about the explanatory relations between special sensibles and common sensibles.[29] The common idea behind different versions of the primary/secondary qualities distinction is that our perception of secondary qualities is in one way or another to be explained in terms of our interaction with primary qualities. As Locke put it, it is in virtue of the configuration of their primary qualities that objects have the power to produce in us ideas of secondary qualities. And so, someone considering Aristotle's distinction from a more modern perspective might expect perception of the special sensibles to be explained in terms of perception of the common sensibles. In fact, Johnstone suggests, Aristotle's order of explanation seems to go in the opposite direction. On his interpretation of Aristotle, the common sensibles are perceived in terms of changes and variations in the perception of special sensibles:

> For example, one perceives movement when the colors, sounds, or smells one is perceiving change across time, and rest by the absence of such changes. Similarly, one can perceive shape by

[28] In other words, Aristotle is a perceptual realist about secondary qualities (see Broadie 1993 for a classic discussion). This is not because he was naïve or scientifically ignorant. Aristotle was well aware of Democritean atomism, which offered a sophisticated theory of how the manifest world of apparently solid objects with colors, smells, and the full range of (primary and secondary) qualities emerges from the interactions of appropriately configured atoms in a void with sense organs that are themselves ultimately to be understood as appropriately configured atoms in a void. In fact, much of what we know of Democritean science comes from Aristotle and the Aristotelian tradition.

[29] See Johnstone 2015 and 2022

> means of variations in one's tactile experience or visual experience, as for instance when an edge is registered as the point at which two different colors meet, or when one experiences a change in tactile resistance. Number is perceived by registering variations in the input from a single sense, either at a time (as when one sees or feels two distinct shapes with a gap between) or across time (as when one hears successive gunshots). Finally, size is perceived by (for instance) feeling along the side of a solid object, or on the proportion of one's visual field that is occupied by certain regions of color.[30]

This proposal is speculative, but it is very consistent with both Aristotle's perceptual realism and with the fact that, both in the *De Anima* and in more scientific writings such as *De Sensu*, he has little to nothing to say about how the sense organs might *directly* perceive the common sensibles. It certainly seems that for him the most basic form of perceptual interaction is between sense organs and special sensibles.

In any event, however Aristotle construes the relation between the special and the common sensibles, he clearly distinguishes them from things that are perceived coincidentally. Here is how he introduces this further distinction:

> Something is said to be an object of perception co-incidentally if, for example, the white thing should be the son of Diares. There is co-incidental perception of him, because he coincides with the white thing, of which there is perception. For this reason, one is not affected by an object of perception insofar as it is such a thing as the son of Diares.[31]

[30] Johnstone 2022, pp. 165–166.
[31] DA II.6 418a20–24, trans. Shields.

The basic contrast between something being perceived in its own right (*kath' hauto*) and something being perceived co-incidentally (*kata sumbebêkos*) is tolerably clear. And it is fairly plausible that we do not perceive in his own right the son of Diares as the son of Diares—for one thing, it is perfectly possible to see the son of Diares without knowing who he is. What is less clear, however, is how we should think about the three-way classification that has emerged. In particular, where do ordinary, three-dimensional objects fit in? How does Aristotle explain the perception of the individual substances that he thinks are the most basic elements of the physical world?

It is plain that individual substances are neither special sensibles not common sensibles. But are they therefore things that are perceived co-incidentally? Some commentators have thought so.[32] This seems implausible, however. The human being whom we see does not affect us *qua* son of Diares, but surely it does affect us *qua* individual substance. There seems to be a clear difference between seeing a human being and seeing the son of Diares. One might say, in an Aristotelian spirit, that well-functioning perceptual systems are calibrated to perceive human beings and other individual substances, whereas collateral information is required to perceive the son of Diares as such.

Nor does this proposal that we perceive individual substances coincidentally fit well with what Aristotle actually says in the quoted passage, where he makes clear that we see the son of Diares co-incidentally because he coincides with the white thing that we perceive, presumably in its own right. But what could that white thing be other than the individual substance, the human being? If so, and if we perceive the white thing co-incidentally, then it must be the case that the white thing coincides with something else that

[32] See for example Polansky 2007 at pp. 259–261.

we perceive in its own right. But there is no such candidate. We have hit bedrock with the white thing.[33]

Must we conclude, then, that Aristotle's three-way classification is incomplete, because it does not allow him to accommodate ordinary, three-dimensional individual substances as objects of perception? Perhaps, but a strategy for avoiding this conclusion has been developed by Klaus Corcilius, who proposes a revision of how we think about the perception of the special sensibles.[34] We should not think of sensible qualities as disembodied sense data or qualia that we perceive in isolation, but rather as qualities that are always perceived as qualities of individual substances. In his words:

> We may conclude that external 3-D objects are a privileged class of objects of perception in the following way: perception is always and immediately of 3-D objects because each affection by a special sensible is not a perception of that special sensible in isolation from the 3-D object of which the special sensible is a quality, but of it as *of* a 3-D object . . . in one word, we invariably perceive 3-D objects, never isolated qualities, and we perceive them non-coincidentally *by* being affected by their special sensibles.[35]

Corcilius's point is not just that we perceive not colors but colored expanses. He would also say, I think, that we do not see colored expanses *simpliciter*, but colored expanses that are typically the surfaces of three-dimensional objects that have size, bulk, texture, and so forth.

[33] There is a subtlety of translation here. The phrase that Shields translates as "the white thing" could also be translated more simply as "the white" or "whiteness," which would be more congenial to the interpretation I am rejecting. However, Shields's wording fits the sense much better, because it is simply false that the son of Diares coincides with the white, or with whiteness.

[34] See Corcilius 2022.

[35] Corcilius 2022, 131.

From the perspective of the phenomenology of perception this seems to be exactly right. And it would be nice to be able to avoid interpreting Aristotle as an early precursor of the sense data theory of perception. However, the fact remains that there are clear gaps in Aristotle's account. In the *De Anima* and other writings he gives fairly well-worked-out accounts of the perception of special sensibles. He has relatively little to say, however, about the mechanics of how common sensibles are perceived, and almost nothing about what it is to perceive a three-dimensional object as a three-dimensional object (as opposed to seeing it as a table or as the son of Diares).

6.6 Looking ahead

At the end of DA II.6 Aristotle has put in place his methodological framework for studying the individual senses. The final sentence of the chapter sums up the road ahead: "Among things perceived in their own right, exclusive objects [i.e. special sensibles] are properly perceptible objects; and it is to these that the essence of each sense is naturally relative."[36] Each of the five senses is defined in terms of its capacity to perceive the corresponding special sensible(s), and so each sense is to be examined in terms of how it makes that perception possible. Sight is to be understood in terms of how it makes possible the perception of color, hearing the perception of sound, and so on.

The next five chapters, from DA II.7 through DA II.11, work through the five senses, starting with sight and ending with touch. This is not the end of Aristotle's discussion of perception, however. In DA II.12 he returns to discussing perception in general, offering a suggestive account of perception in terms of the reception of

[36] DA 417a24–25.

forms without matter. The first two chapters of Book III also discuss perception. DA III.1 discusses the number of senses, arguing that there are not and could not be more than five senses, before moving to a discussion of common perception, while DA III.2 explores a number of interrelated puzzles about perception.

Further reading

Johansen 2012 is a book-length study of the hierarchy of capacities and how they feature in the overall project of the *De Anima*. The serial ordering of the capacities and the *psuchê*/figure analogy developed in DA II.3 is explored in Ward 1996 and Frey 2022. On the parts of *psuchê* and separability see Corcilius and Gregoric 2010.

Burnyeat 2002 is an important, but rather long, discussion of Aristotle's discussion of perception as alteration in DA II.5, discussed in Lorenz 2007. Many of the issues emerging from DA II.5 come to the fore in the lengthy debate between 'literalist' and 'spiritualist' interpretations of Aristotle's theory of perception. See Further Reading for Chapter 8.

Broadie 1993 is an influential discussion of Aristotle's perceptual realism, on which see Broackes 1999. See Ganson 1997 for a discussion of Aristotle's theory of sensible qualities in the context of later distinctions between primary and secondary qualities, and Vasiliou 1996 on Aristotle's epistemology of perception. Johnstone 2022 focuses on the objects of perception, as discussed in DA II.6.

7

Perception and the senses

Focus Texts *De Anima* II.7–12
De Sensu et Sensibilibus, particularly 1–3

Just under half of DA II, from DA II.7 through DA II.11, is taken up with detailed explorations of the individual senses, in which Aristotle applies (more or less consistently) the general theoretical framework developed in DA II.4–6 and discussed in the previous chapter. The treatment in the *De Anima* is complemented by the lengthier discussion of perception in the later work *De Sensu et Sensibilibus* (*On Perception and the Objects of Perception*), typically referred to as the *De Sensu*. Broadly speaking, the discussion in the *De Anima* is more philosophically motivated, while that in the *De Sensu* goes further into Aristotle's scientific theories, while frequently referring back to the *De Anima*. So, for example, we find in *De Sensu* 2 a detailed discussion of the composition of the eye and in *De Sensu* 3 the details of Aristotle's innovative theory of color as a ratio of white and black.

Aristotle's discussion of the senses is extraordinarily systematic and contains a multitude of striking insights. At the same time, though, some of what he says will seem quaint, and occasionally bizarre, to modern readers, and the overall arc of his discussion is somewhat puzzling. Aristotle discusses the individual senses in the following order:

II.7	sight
II.8	hearing
II.9	smell
II.10	taste
II.11	touch

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This is a curious order, partially duplicated in the *De Sensu*, where he devotes successive chapters to color (sight), flavor (taste), and smell, skipping touch altogether. As we have already seen, Aristotle makes clear in multiple places that he views touch as the most fundamental sense. It is, for example, the only sense that every animal possesses, because of its close connection with nutrition and sensations of pleasure and pain. The overall discussion of the capacities of the *psuchê* is hierarchical, starting with nutrition/generation, which is common to all living things. Why does he not approach the senses in the same way? Aristotle is a very careful thinker. It is hard to imagine that the ordering is an accident.

The *De Anima* does not give a direct answer. There is a short passage in *De Sensu* 1 where he describes sight as the highest sense:

> Of these senses sight is in its own right superior for the necessities of life, whereas hearing is superior co-incidentally for thought. For the capacity of sight reports many distinctions of all kinds, because all bodies partake of color, and thus we perceive the common objects by this sense especially. (By the common objects I mean figure, magnitude, movement, number.) But hearing reports only the distinctions of sounds, and also those of voice to a few animals. Co-incidentally, however, hearing makes the greatest contribution to understanding. For because it is audible, speech is a cause of learning, not in virtue of itself but co-incidentally; for it is composed of words, and each word is a symbol.[1]

It is hard to extract from these remarks a compelling reason for starting with sight and ending with touch.

More plausibly, Aristotle starts with sight because it is there that he is able to make the strongest case for some of the basic tenets

[1] *De Sensu* 1, 437a4–15, trans. Miller in Miller 2018. See also the opening sentences of *Metaphysics* Alpha at 980a21–27.

of his approach to perception. In particular, DA II.7 develops, in the context of sight, two fundamental ideas that will structure his treatment of the other senses. The first is the single most important claim that Aristotle makes about the actual mechanics of perception. This is his insistence that all perception requires a medium. Sensible qualities are causally efficacious. They act upon the perceiver's sense organs. But that causal process in some sense takes place though a medium. He thinks that this requirement holds not just for what might be termed the distal senses, such as vision and hearing, but also for the contact senses (e.g., touch and taste). The second is his insistence that sensible qualities (colors, smells, tastes, and so forth) have direct causal powers. This is a key element in Aristotle's perceptual realism, as discussed in Section 6.5 above.

This chapter will not go chapter by chapter through the individual senses. Instead, it will focus on these two main themes and how they connect with each other. Section 7.1 discusses the general question of why Aristotle thinks that perception requires a medium, starting with vision and then working out to the other senses. Section 7.2 explores how Aristotle thinks of sensible qualities interacting with the medium and with the organs of sense. Finally, Section 7.3 discusses Aristotle's suggestion in DA II.12 that perception should be understood in terms of the reception of forms. For a perceiver S to perceive a sensible quality X is for S's sense organ(s) to receive the form of X without the matter. Making sense of this initially baffling claim will take us back to the discussion of perception as a distinctive type of alteration in DA II.5 (see 6.4 above) and sheds light on the debate between "literalist" and "spiritualist" interpretations of Aristotle's theory of perception.

Before we begin, we need to discuss a puzzle arising from how Aristotle individuates the senses. His official position, as explored in Chapter 6, is that the senses are individuated by their objects. In other words, each sense is individuated through its corresponding special sensible. This is fairly straightforward for four of the senses. Color is the special sensible for sight; sound for hearing; smell

for smell; and flavor for taste. But what about touch? When he gets to touch in DA II.11 Aristotle seems to move away from his standard model, because touch does not seem to have a unique and individuating special sensible. He identifies a version of the problem early on in the chapter:

> Every sense seems to be of a single pair of contraries: sight of white and black; hearing of high and low; taste of bitter and sweet. But among the objects of touch are included many pairs of contraries: hot and cold, dry and wet, hard and soft, and whatever else is of this sort.[2]

The solution he immediately proposes, however, suggests that he has not fully engaged with the problem. He points out that each of the non-tactile senses can itself be viewed as detecting multiple pairs of contraries (e.g., loudness and softness in the case of spoken sound). The fact remains, however, that the contraries of loudness and softness define a scale that can be thought of as a determinate of the determinable *sound*, just as do the contraries high and low. Each special sensible is a determinable under which fall multiple determinates, each defined by a pair of contraries. So, color is a determinable, under which there fall multiple determinates defined by different pairs of contraries (white/black, cold/warm, dim/bright, and so on).[3] The problem with touch, though, is that there does not appear to be a single determinable to serve as the special object of the sense. Aristotle admits as much toward the end of the chapter: "The objects of touch are then the distinguishing features of a body insofar as it is a body. By distinguishing features I mean those which characterize the elements which we

[2] DA II.11 422b23–27, trans. Shields.

[3] The determinate-determinable relation is level-relative. Relative to color, the scale from white to black is a determinate, but it functions as a determinable relative to an individual hue.

spoke about earlier: hot and cold, dry and wet."[4] It is a basic principle of Aristotle's chemistry that the four elements (fire, earth, air, and water) are composed from the two most fundamental pairs of contraries, hot/cold, wet/dry. No further reduction is possible. These are not determinates of a higher determinable. And so, there simply cannot be a single special sensible for touch.

This in itself is not a problem for Aristotle's position, as he is not committed to the claim that each sense has exactly one proper sensible. What is problematic, however, is a potential blurriness in the distinction between touch and taste suggested by some of his comments about taste in DA II.10. So, for example, he states at 422a8 that the objects of taste are tangible, which is consistent with his earlier comment in DA II.3 that "flavor is among the objects of touch."[5] If he means by this that the objects of taste are some subset of the objects of touch, then it would seem that by his lights we have four senses rather than five.

Fortunately, his position is more nuanced. In DA II.10 Aristotle explains at some length that the proper object of taste, which is flavor, is in moisture in a way that explains his comments while clearly distinguishing the objects of touch from the objects of taste. The opening lines of DA II.10 make the point clearly:

> An object of taste is something tangible; and it is for this reason not perceptible through the medium of a foreign body, since touch does not come about in this way. And the body, in which the flavor is, the object of taste, is in moisture, which is its matter. This is something tangible.[6]

Only things that are moist can be perceived as having flavor, because we cannot perceive flavor unless it is mixed with something

[4] DA II.11 423b27–29, trans. Shields

[5] DA II.3 414b11, trans. Shields (but see note 8 below for an alternative way of translating this passage).

[6] DA II.10 422a8–11 trans. Shields.

moist. In fact, in *De Sensu* IV, flavor is actually defined as the modification of the moist by the dry (more precisely, by those dry things that are nutritive).[7] Aristotle's position, therefore, can be put more accurately as follows. Flavors, the objects of taste, are tangible in the sense that they emerge from the interaction of the hot and the dry, both of which are objects of touch. But that does not make them themselves objects of touch. In this way Aristotle manages to preserve his basic principle that the senses are individuated by their proper objects, while doing justice to the basic fact that touch and taste are both contact senses.[8]

One of the subtle points made in Aristotle's discussion of taste is that while flavor is in the moist and is perceived through the moist, it is not in the moist in the way that color or smell is in the air. The moist, in other words, is not a medium for flavor in the way that air is a medium for color and smell. But that does not mean that taste does not proceed through a medium. In fact, as we will see in the next section, Aristotle thinks that *all* perception, irrespective of modality, requires a medium.

7.1 The need for a medium

As mentioned above, it is no accident that Aristotle begins his discussion of the senses with sight. Sight allows him to make the strongest case for two basic principles of his approach to perception: (a) the requirement that perception take place through a medium, and (b) the principle that sensible qualities, including the

[7] *De Sensu* 4, particularly at 441b 22–442a2.

[8] So what about the statement at 414b11 standardly taken to say that flavor is among the objects of touch (lit: some one of the objects of touch)? The Greek reads *ho de chumos hen ti tôn haptôn estin*. If the rough breathing on *hen* were instead read with a smooth breathing, *en*, then the sentence would read "flavor is in some one of the objects of touch," which actually is a much better statement of Aristotle's position. (Admittedly, *en* typically takes the dative, not the accusative, but not always—see LSJ entry on *en* at B.)

special sensibles, have direct causal powers. This section focuses on (a); (b) will be explored in Section 7.2.

The most obvious and basic fact about sight is that its objects are distal to the perceiver. It is also, Aristotle thinks, an obvious and basic fact about seeing that it can only take place if, in some sense, the sense organ is affected by something.[9] Taking these two things together raises the question of how a distal object can affect a sense organ. Toward the end of DA II.7 Aristotle quickly rules out the possibility of action at a distance—for example, the possibility that the distal object should directly affect the sense organ. He makes the point through a criticism of Democritus, who appears to have held that perception involves "effluent images" being transmitted from the perceived object to the perceiver. In a situation in which there were simply empty void between perceiver and perceived, Aristotle describes Democritus as believing that the image would arrive undiminished and with maximum clarity. But:

> Democritus is wrong to think that if the intervening medium were a void, even an ant in heaven would be seen clearly. For this is impossible, since seeing comes to be when what is capable of perceiving be affected by something.[10]

Something can only be affected by what is in contact with it. So, it immediately follows for Aristotle that sight requires a medium. The distal object cannot directly affect the sense organ. It can only affect an intervening medium, which in turn affects the sense organ. So, since there is no medium in a void, nothing could be perceived.

For Aristotle, both air and water function as intervening media for sight. Strictly speaking, though, it is not air and water *per se* that function as media. As we will see in more detail in Section 7.2,

[9] The qualification refers back to the difficult questions raised in DA II.5 about what sort of alteration perception is, as discussed in Section 6.4 above. We will return to this.

[10] DA II.7 419a15–18, trans. Shields.

the medium for sight is what Aristotle terms the transparent (*to diaphanes*), which he describes as an "indwelling nature" (*phusis huparchousa*) that is common to air, water, and various solids (e.g., glass, thin linen).

Aristotle thinks that a medium is required for every sense. The case for the necessity of a medium in the case of sight seems compelling (given Aristotle's framework principles), and can be fairly easily extended to hearing and smell. The medium for smell is something common to water and air, and presumably some solids through which smells can pass. Aristotle does not give it a name, but Alexander of Aphrodisias offers "the transodorant" (*to dioasmon*).[11] The medium for sound is air. For some reason Aristotle does not feel the need to postulate what might be termed "the transacoustic," even though he recognizes that sound can be transmitted through water (and, of course, through a wide range of solids).

But the extension to taste and touch seems more tenuous. Here is how he extrapolates from sight at the end of DA II.7, with the sentences numbered for convenience:

> [1] The same account also pertains to sound and odor. [2] For neither of these produces perception *by touching the sensory organ*. [3] Rather, an intervening medium is moved by odor or sound, and each of the sensory organs is moved by this. [4] Whenever one puts something sounding or something with an odor upon the sensory organ itself, it will not produce perception. [5] Things are similar concerning touch and taste, though this does not appear to be so; the reason why will be clear later.[12]

[11] Alexander, *Commentary on the De Sensu* at 89,2 (Tomey 2000 at p. 86).

[12] DA II.7 419a25–31, trans. Shields. I have departed from Shields's translation in the italicized section, where he gives "when touching the sensory organ." He, together with Ross and Valverde among others, treats the participle *haptomenon* as conditional/temporal. This makes the second sentence in the passage say the same thing as the fourth sentence, which seems to make both it redundant and the flow of the argument a little mysterious. The participle could also be read as causal (*because* it touches the sensory organ) or, as I suggest, instrumental (*by* touching the sensory organ). See Smyth 1956 at §2063.

Aristotle starts off in [2] by pointing out the obvious—smell and hearing are distal senses, not contact senses. He then infers in [3] that they operate in the same way as sight, by affecting an intervening medium. [4] reverts to a point first made a few lines above at 419a11–13, which is really an immediate corollary of the need for a medium—namely, that a colored surface placed directly on the surface of the eye will not be seen. The same holds he thinks for smell and hearing—and in [5] he extends the point to touch and taste.

In DA II.11 Aristotle fills in the details hinted at in [5]:

> In general, it would seem that flesh and the tongue are related to their sensory organ just as, in each case, air and water are related to sight, hearing, and smelling. When the sensory organ has been touched, no perception could occur in either this or that case, as if, for example, someone were to place a white body upon the surface of the eye. In this way too it is clear that the capacity to perceive an object of touch is internal. It would turn out here just as it does in the other cases: one does not perceive things placed upon the sensory organ, but one does perceive what is placed upon the flesh. Consequently, flesh is the medium pertaining to the faculty of touch.[13]

It certainly looks as if Aristotle is arguing from the fact that things directly in contact with the sense organ cannot be perceived to the necessity of a medium.[14] This would not be a very compelling argument. For one thing, the contact claim is not far from being a notational variant of the claim that perception require a medium, and so it cannot provide much, if any, independent support for it. More importantly, it would seem to be completely question-begging when it comes to touch and taste. The common-sense view

[13] DA II.11 423b17–26, trans. Shields.
[14] Compare Shields at pp. 231–232.

is surely that touch and taste do not require a medium. The organ of taste would seem to be the tongue (more precisely, the taste buds, papillae, and other lingual tissues), while the organ of touch is the skin (more precisely the various nerves and receptors that terminate at the surface of the skin). Nobody who thinks that *these* are the sense organs for touch and taste will be remotely sympathetic to the general thesis that things directly in contact with a sense organ cannot be perceived.

So why then does Aristotle insist that touch and taste require a medium, so that the tongue and the skin/flesh are the media of the senses rather than the sense organs themselves? The most likely explanation is that it comes from a prior theoretical commitment to the idea that the sense organs all ultimately communicate to an internal organ, which in *De Partibus Animalium* Aristotle clearly identifies as the heart:

> Now as there cannot possibly be an animal without sensation, it follows as a necessary consequence that every animal must have some homogenous parts; for these alone are capable of sensation, the heterogenous parts serving for the common functions. Again, as the sensory faculty, the motor faculty, and the nutritive faculty are all lodged in one and the same part of the body, as was stated in a former treatise, it is necessary that the part which is the primary seat of these principles shall on the one hand, in its character of general sensory recipient, be one of the simple parts; and on the other shall, in its motor and active character, be one of the heterogenous parts. For this reason it is the heart which in sanguineous animals constitutes this central part, and in bloodless animals that which takes the place of the heart.[15]

All sense organs communicate to the heart, on Aristotle's view. But touch is distinctive in that the heart is the sense organ of touch. His

[15] *De Partibus Animalium* 647a22–32, trans. W. Ogle in ROT.

reasoning for this is somewhat tortured.[16] But the important point is that the thesis that flesh and skin are media for perception rather than sense organs follows immediately from the thesis that the heart is the sense organ of touch.

This aspect of Aristotle's thinking has not stood the test of time. Before leaving the topic, however, it is worth noting an interesting and thought-provoking thought experiment that Aristotle brings in to undercut any resistance to the idea that skin and flesh can function as a medium emerging from the fact that perception and contact occur at the same time. Imagine, he asks, that a membrane were wrapped around our body in such a way that we experienced sensations of touch through it. It would be clear in such a situation that the membrane would be functioning as a medium, just as if air were to be somehow attached to our bodies. The point he is trying to make, I think, is that our actual flesh stands to the internal organ of touch in much the same way that the hypothetical membrane would stand to the flesh beneath it.[17]

7.2 The causality of perception

As discussed in Section 6.5, one of the distinctive features of Aristotle's approach to perception is his realism about sensory qualities. Colors, tastes, smells, and so on are fundamental constituents

[16] In *De Sensu*, he correlates the senses to the four elements: sight to water, hearing to air, and smell to fire. By a process of elimination, that leaves earth for touch and taste. The connection of earth with touch leads Aristotle to locate the sense organ of touch and taste in the heart: "And for this reason the sense-organ of each, namely of taste and touch, is close to the heart. For the heart is opposed to the brain, and it is the hottest of the bodily parts" (439a2–4, trans. Miller). Aristotle's position is that the brain is cool, which makes the head an appropriate location for the sense organs associated with the cooler elements, while the heat of the heart makes it an appropriate location for touch and taste.

[17] Arguably, however, the membrane would, after a time, be experienced as part of the body, as is often the case with prosthetic limbs. For related discussion of what might be termed the Lockean view of bodily ownership, see Cassam 1995 and Bermúdez 2020.

of Aristotle's universe, on an equal ontological footing with shapes, magnitudes, number, and the rest of what would now be called primary qualities. But what does this actually mean? How does one measure the reality of the special sensibles? The most obvious criterion is causal. Whereas early modern philosophers such as Locke held that only primary qualities have causal powers, Aristotle is firmly of the view that the special sensibles (which very much overlap with Locke's secondary qualities) are just as causally efficacious as the common sensibles.

This emerges clearly in his discussion of sight and its special sensible, which is color. We see what is visible and what is visible is color, and Aristotle emphasizes that being visible is a causal power:

> The visible is color, and that which is on the surface of what is visible in its own right—in its own right, not by definition, but because it contains within itself the cause (*to aition*) of its being visible.[18]

He explains:

> Every color is capable of setting in motion that which is actually transparent; and this is its nature (*phusis*).[19]

> For being color is the same as being capable of setting in motion what is actually transparent.[20]

> . . . color moves the transparent, e.g., air, and the sensory organ is moved by this, which is continuous.[21]

So, in effect, Aristotle defines color in terms of its causal effects upon the transparent, which is the medium of sight. He does not

[18] DA II.7 418a29–31, trans. Shields.
[19] DA II.7 418a31–418b2, trans. Shields.
[20] DA II.7 419a9–11, trans. Shields.
[21] DA II.7 419a13–15, trans. Shields.

offer comparably precise characterizations of the other special sensibles, but he does apply a similar model to the other senses. Each special sensible is perceived in virtue of causally affecting the medium, which in turn causally affects the sense organ.

Before going into the details of how this is supposed to work, though, we should consider the scope of the causal powers of the special sensibles. Do Aristotle's special sensibles have causal powers over and above the power to cause perceptions in suitably receptive perceivers when conditions are appropriate? If the only causal power of special sensibles is to cause perceptions, then the difference between Aristotle's perceptual realism and Lockean anti-realism seems harder to state. What exactly is the difference between objects causing perceptions in virtue of their primary qualities and their causing them in virtue of special sensibles, if special sensibles make no other contributions to the causal order besides causing perceptions? There is a certain tension in simultaneously saying, on the one hand, that colors are causally efficacious and independently existing features of reality and, on the other, that those causal powers exist only relative to perceivers.

Fortunately, Aristotle does not seem at all inclined to restrict the causal powers of special sensibles. His claim that colors set air in motion is not qualified in any way. He does not say, for example, that this occurs only as part of a process that results in perception. Likewise for sound, which (as described in DA II.8) is the power something has to move quantities of air when sharply impacted. There is no indication that this movement occurs only when the moving packets of air end up impacting a sensory organ. And it is hard to see how Aristotle could hold that view, since (at least in the case of sound) the movement of air takes time, and whether an extended process begins cannot depend upon how it might end.[22] The perceiver-independence of the special sensibles is most

[22] A fourteenth-century Aristotelian might have made this point with the conceivability of God deciding to annihilate the world during the interval between the initial impact and the air reaching the sense organ.

clear, however, in the case of touch. As discussed above, the special sensibles detected by touch are "the distinguishing features of a body insofar as it is a body" (423b27). These basic features are defined by the pairs of contraries hot/cold and dry/wet. The causal powers of these special sensibles are as comprehensive as it is possible for anything sublunary to be, since they are the foundation of Aristotle's chemistry and hence ground the causal powers of everything in the physical world.

Interestingly, while the causal powers of special sensibles are not perceiver-dependent, those causal powers are not, so to speak, explanatorily autonomous. In at least some cases, we cannot explain the causal powers of a special sensible without bringing in one or more one common sensibles. The most obvious example is sound. Sound occurs when something solid and smooth is struck by something else appropriately solid and smooth. Solidity and smoothness are actually what might be termed derivative special sensibles. They are objects of touch, ultimately to be understood in terms of the contraries hot/cold and dry/wet. But impact is a species of motion and detectable through multiple senses. Color is another example. Aristotle emphasizes that only determinately bounded surfaces have colors. When an object does not have a definite boundary, it has no fixed color. In the *De Sensu* he gives the examples of the sky and the sea, whose color varies depending upon one's distance from it.[23] And shape, of course, is a paradigmatic common sensible.

Returning to the main theme, we need to consider how Aristotle explains the causality of the special sensibles. Starting, as he does, with sight and color, the basic picture seems clear enough. Color moves the medium, which is air (or sometimes water), which then moves the sense organs. But when we look at the details, things become much murkier. The first complexity is that air is not moved *qua* air. Vision is very different from hearing. It is possible because air is transparent. The transparent is what allows colors to be

[23] *De Sensu* 439b2–5.

seen. It is common to air, water, and objects such as glass and fine linen. But what is the transparent? He offers what initially looks like a definition: "By *transparent* I mean that which is visible, not strictly speaking in its own right but due to the color of something else."[24] As Shields's translation brings out, this is actually a definition of the adjective 'transparent' (*diaphanês*). As Aristotle goes on to explain, things have this property to the extent that "there is an indwelling nature which is the same in them both [sc. air and water], as well as in the everlasting body above."[25] This "indwelling nature" is a potentiality. When actualized, it is light.[26] But in potentiality, darkness. This presents a puzzle. The "underlying nature" shared by air, water, and transparent objects is characterized purely dispositionally, but Aristotle's theory of sight requires it to be something that can be set in motion by color and that can itself move the sense organ.

A modern reader trying to make sense of this theory might present the following gloss. When Aristotle says that color moves the transparent, he should be read charitably as groping for the correct view that light is reflected from colored surfaces. Likewise, his saying that the transparent moves the sense organ is a primitive version of the scientifically correct view that light is absorbed by rods and cones.

This modern approach to color perception cannot be grafted onto Aristotle, however, because it is ruled out by his view of light. Light does not move for Aristotle, and so the idea of light rays being reflected from a surface and traveling through the air, familiar though it is to us, would be alien to him. Light is a state (*hexis*) that simultaneously and completely permeates the medium (be it air, water, or a transparent object). That is why he characterizes it

[24] DA 418b4–6, trans. Shields.
[25] 418b7–9, trans. Shields
[26] The word translated as 'actualized' is *entelecheia*, which is the word that Aristotle uses to describe the relation of the *psuchê* to the body. Light stands to the transparent as the *psuchê* stands to the body.

analogically (*hoion*) as the color of the transparent. The idea that light is static and therefore lacks directionality leaves him with challenges (noted by Philoponus and many since) explaining shadows and other familiar phenomena, but it was certainly his view, as made clear in his critical comments on Empedocles's theory of light at DA II.7 418b20–25.[27]

So, there is a fundamental tension at the heart of Aristotle's theory of sight. On the one hand, he is committed to a mechanistic account of vision in terms of colors generating movements in the medium, which are then transmitted to the sense organs. But at the same time his account of the medium appears to make it completely inert.

T. K. Johansen tries to reconcile this tension by rejecting the first pole. He argues that Aristotle is not actually thinking of the medium in terms of a chain of intermediate causes at all. Instead, the principal role of the medium is to provide continuity between sense object and perceiver, bridging the causal gap between object and sense organ, so that the sensory quality can act on the eye:

> Once this continuity has been established we do not need further causes than the sensible quality, for it is the sensible quality that holds the causal agency all the way through the medium. It is the *kinêsis* of the sense quality that continues all the way through the medium because the medium is continuous. The change in the medium is the change *of* the sense organ in the sense that it is the sense object that continues causing the change through the medium.[28]

Johansen glosses this further by suggesting that the job of the medium is to allow the sense quality to appear through it, rather than

[27] For further discussion see, e.g., Sambursky 1958 and Sorabji 1992, 2004.
[28] Johansen 1998, p. 134.

to support a causal sequence of events between the object and the sense organ.

It helps his interpretation that Aristotle insists that vision is instantaneous, because a succession of causal events must (arguably) take place over time:

> To illustrate the point [that alteration can be instantaneous], Aristotle uses the example of a (small) lake that freezes over all at once. This shows how a qualitative change can affect every part of a body instantaneously. Similarly, when the color acts upon the transparent the transparent is affected all at once.

The analogy is questionable, however. It is true that Aristotle does in the *De Sensu* offer freezing as an illustration of instantaneous *alloiôsis* (at 447a2). But this is surely not how large bodies of water freeze—lakes freeze from the perimeter in. And indeed, in the very next sentence Aristotle recognizes the limitations of the analogy:

> Even so, however, if what undergoes heating or cooling is large, what receives it is acted upon by what receives it, and the first part changes by the thing changing it, and it is not necessary that the whole undergoes alteration at the same time and in a mass.[29]

Johansen's position seems a very accurate account of the *phenomenology* of perception. It seems right, from an introspective perception, to say that colors appear to us through the air. But it is somewhat mysterious as an account of the *mechanics* of perception. To say that the medium is instantaneously altered in a way that allows a sensory quality to act upon a sense organ would seem to be more a description of the problem than a solution.

Moreover, in that very section of the *De Sensu*, as well as in the relevant chapters of the *De Anima*, Aristotle is clear that, even if

[29] *De Sensu* 42712–42717, trans. Miller in Miller 2018.

vision is correctly analyzed as an instantaneous *alloiôsis*, the model does not transfer to the other senses. Neither sound nor smell is instantaneous, for example. Aristotle gives a very mechanical account of sound. Sound is the result of impact between appropriately smooth and solid objects. This impact creates a unified mass of air that travels through the medium (air or water) to the organ of hearing. The details of smell are less worked out, but it also seems to involve movement through the medium over time. Touch is even more dissimilar. Flesh is the medium for touch, and it seems clear that tactile perception takes place directly through the flesh being directly changed by the perceived object. The flesh and skin become hot when they come into contact with a hot object. Different degrees of pressure are perceived as a function of how much the skin and flesh are distorted. And so on.

In sum, Aristotle is pulled in two different directions when it comes to vision. His causal realism about sensible qualities and his desire to be faithful to the phenomenology of seeing leads him to view sight in terms of colors acting directly upon sense organs. What is so striking about vision is that colors are perceived as simultaneously immediate and distal. At the same time, his views on causation and his understanding of physiology lead him to realize that some sort of account has to be given of what happens between sensible quality and sense organ. It is far from clear that he manages to bring these into harmony in the case of vision. But the tension is much less strong for the other senses. They lack the basic phenomenology of being simultaneously distal and immediate that makes vision so philosophically challenging.

7.3 Perception as form transmission

In DA II.12, Aristotle returns, after his journey through the individual senses, to considering perception in general. The first few sentences make a striking claim:

> It is necessary to grasp, concerning the whole of perception generally, that perception is what is capable of receiving perceptible forms (*aisthêtôn eidôn*) without the matter, as wax receives the seal of a signet ring without the iron or gold. It acquires the golden or the metallic seal, but not insofar as it is gold or metal. In a similar way, perception is also in each case affected by what has the color or taste or sound, but not insofar as each of these is said to be something, but rather insofar as each is of a certain quality, and corresponding to its proportion (*kata ton logon*).[30]

Somewhat out of the blue, Aristotle offers a hylomorphic account of perception in general that appears discontinuous with the preceding discussions of the individual senses. What happens in perception, he suggests, is that the forms of sensible objects are transmitted without the matter.

It should be apparent that Aristotle is really introducing a completely new concept here. The perceptible forms that are supposed to be transmitted in perception cannot be the substantial forms that were elucidated in Chapter 4. The notion of substantial form, which of course frames his general characterization of the *psuchê*, is broadly teleological and clearly defined at the level of the species, not of the individual. The substantial form of Socrates is given by what it is to be human, rather than by what it is to be this particular human being, Socrates. And for that reason the substantial form of Socrates is not qualitatively different from the substantial form of Callias, or that of any other human being. In contrast, since perception is paradigmatically of the particular, perceptible forms must be particular and specific to a perceived object at the moment of perception.

As noted at various points, Aristotle occasionally slides between the notion of form (*eidos*) and the notion of shape (*morphê*), particularly when he is discussing form in connection with artifacts. The

[30] DA 424a17–24, trans. Shields.

matter of a marble statue, for example, is the marble, and its form the shape imparted by the sculptor. As Chapter 4 brought out, this way of thinking about form does not map at all onto the theoretical framework that he develops in the *Physics* and the *Metaphysics*, which is a framework deeply rooted in his model of explanation and his teleological understanding of living things, and in fact it is far from clear that Aristotle's notion of form can be coherently extended to artifacts. It does, however, offer one way of making sense of what is going on in the puzzling passage we are considering. After all, what the signet ring leaves in the wax is an imprint of its shape. And there is a clear sense in which Socrates and Callias have different shapes.

But Aristotle cannot be thinking about perceptible forms in terms of shape. Shape is a common sensible, and so this proposal would make completely mysterious what goes on when each sense successfully detects its corresponding special sensible(s). And indeed, the passage we are considering seems to make clear that perceptible forms are somehow connected with the special sensibles, as it refers specifically to colors, tastes, and sounds. Here is what Hicks has to say in his commentary on the expression 'perceptible forms' (*tôn aisthêtôn eidôn*):

> Sensible objects have form as well as matter. Sense, as we shall see, is form, and, as such, it apprehends form. The "sensible forms" of the text are therefore the forms of sensible things, the qualities in them which constitute them what they are, the red of the red thing, the sound of the resonant thing, the flavor of the flavored thing. Each of these qualities, taken in itself, is a universal.[31]

A little further on in his discussion of this passage, he adds:

[31] Hicks 1907, p. 416.

> This means that the object acts upon sense not in so far as it is a concrete object, but in so far as it is colored, or flavored, or sonorous: e.g. when we perceive the white rose by sight, it is not the rose *qua* rose, but the rose *qua* white, which acts upon the sight.[32]

It is hard to disagree with what Hicks is saying here, as a general account of how Aristotle understands perception. Far less clear, however, is how it helps to elucidate Aristotle's understanding of perceptible forms.

There is a basic problem with applying the matter/form distinction to sensible qualities such as color and flavor. On the face of it, it seems, quite literally, a category mistake. The matter/form distinction is developed for individual substances. What could count as the matter of a sensible quality? We have some sense of what it is for a *colored thing* to have matter, but if perceptible forms are to be understood in the way that Hicks suggests, then we need to be able to make sense of the idea that colors themselves have matter. And that is elusive.

This puzzle connects with another in Aristotle's theory of perception. At various places Aristotle suggests that what happens in perception is that a sense organ literally receives the appropriate special sensible, so that, for example, the eye-jelly literally becomes red when something red is perceived. This aspect of the theory has been much discussed in the secondary literature in the context of how Aristotle envisions the physiological underpinnings of perception.[33] But for present purposes what is important is that in DA III.2 he directly ties this thesis to perceptible forms:

> And, moreover, that which sees is in a sense colored. For the sensory organ is in each case receptive of the object of perception

[32] Hicks 1907, p. 416.

[33] See the Further Reading for references to the debate between "literalist" and "spiritualist" interpretations

> without its matter; and for this reason, even when the objects of sense have gone away, perceptions and imaginings remain in the sensory organ.[34]

He immediately glosses this idea: "The actuality (*energeia*) of the object of perception and of the senses are one and the same, but their being (*to einai*) is different."[35] As we saw in earlier chapters, Aristotle's notion of actuality is very closely tied to the notion of form (and, correspondingly, the notion of potentiality to the notion of matter). So really what he is saying is (a) that the sense organ and the object of perception are one in form, *although different in being* (*to einai*); (b) that this occurs because the sense organ receives the form without the matter, and (c) that this is results in both the object and the sense organ being *in a sense* colored.

The first step in making sense of (a) through (c) is to notice the qualifications, which I have put in italics. Aristotle thinks that perceptible forms (which are received in the sense organs) have a deep commonality with the sensible qualities in objects while nonetheless being conceptually distinct from them. Somewhat anachronistically, one might say that there is some one thing that is being presented under two different modes of presentation. But what is that one thing? What is it that can be thought about in one way as a perceptible form and in another way as a sensible quality?

In thinking about this we can take our cue, not from general discussions of Aristotle's hylomorphism, but rather from a seemingly enigmatic comment at the end of the key passage where he introduces the idea of perception as the transmission of forms:[36]

> In a similar way, perception is also in each case affected by what has the color or taste or sound, but not insofar as each of

[34] DA III.2 425b22–25, trans. Shields.
[35] DA III.2 425b26–27, trans. Shields. See also 426a15–17.
[36] The account that follows is indebted to Ward 1988.

> these is said to be something, but rather insofar as each is of a certain quality, and corresponding to its proportion (*kata ton logon*).[37]

What does Aristotle mean by saying that perception is affected by something "corresponding to its proportion" (*kata ton logon*)? And what is the "something"?

The next three sentences provide a clue, because he explains that the sense organs are themselves to be understood in terms of proportion/ratio (*logos*):

> The primary sense organ is that in which this sort of potentiality resides. The sense organ and this potentiality are, then, the same, though their being (*to einai*) is different. For what does the perceiving is a certain magnitude; nevertheless being capable of perception is not; nor is perception a magnitude, but rather a certain proportion and a potentiality of that thing.[38]

This passage bears careful scrutiny. First, the "potentiality" (*dunamis*) to which he refers is presumably the potentiality to receive perceptible forms. And when he says that perception is not a magnitude (*megethos*), he is making very clear that the capacity to receive forms, although it is (as we might somewhat anachronistically put it) realized in a physical sense organ, is not identical to that organ. Continuing with the anachronism, the capacity is, rather, a higher-order property of the sense organ, and that higher-order property, we are told, is to be understood in terms of proportion/ratio. The Greek word for proportion/ratio is *logos*, which is part of the tightly knit cluster of terms that also includes 'essence' (*ousia*, *to ti ên einai*) and 'form' (*eidos*).

[37] DA II.12 424a21–24, trans. Shields.
[38] DA II.12 424a24–28, trans. Shields.

If the capacity of sense organs to receive forms is to be understood in terms of proportion/ratio, the obvious question to ask is: proportion between what and what? A clue is provided in DA II.11 where Aristotle informs us that "perception is a sort of mean between the contraries present in perceptible objects."[39] This and related comments in the *De Anima* are somewhat compressed and elliptical. To make further progress we need to move to the *De Sensu*, particularly chapters 3 and 4. There he is discussing not perception but rather its objects, namely the sensible qualities. But still, as noted above, Aristotle's view is that "The actuality (*energeia*) of the object of perception and of the senses are one and the same, but their being (*to einai*) is different."[40]

In *De Sensu* 3 he considers different accounts of the nature of color in terms of the contraries black and white. He rejects the views that individual shades of color derive from the juxtaposition of white and black, or by one being superimposed on the other. His preferred account is that individual shades of color derive from white and black being mixed in different proportions: "There will be many colors because the constituents (*ta mignumena*) can be mixed with each other in many ratios, that is, some in numerical relationships and some merely involving excess."[41] In *De Sensu* 4 this basic model is extended to taste:

> Just as colors result from a mixture of white and black, so do the tastes from sweet and bitter. And so then the individual flavors are in a proportion of greater or less, either according to certain numbers of mixture and movement or else in an indefinite manner. And those mixtures which produce pleasure alone are in a numerical relationship.[42]

[39] DA II.11 424a4–5, trans Shields.
[40] DA III.2 425b26–27, trans. Shields. See also DA III.2 426a15–17.
[41] *De Sensu* 440b19–22, trans. Miller in Miller 2018.
[42] *De Sensu* 442a13–18, trans. Miller in Miller 2018.

Aristotle does not explicitly apply this model to the other sensible qualities, but it seems highly plausible that they are all to be analyzed in terms of proportions/ratios between contrary extremes.[43]

So, with this model of sensible qualities in mind, we can put the pieces together. Sensible qualities should be understood as proportions/ratios of contrary qualities (a single pair for sight, hearing, smell, and taste, but most likely more than one for touch). When Aristotle says that the individual sense organs are "means between the contraries present in perceptible objects" (424a4–5), he means that they are appropriately configured to take on the ratio/proportion of the perceived sensible quality. It is because the ratio/proportion in the sense organ matches the ratio/proportion in the perceived quality that Aristotle is able to say: "The actuality (*energeia*) of the object of perception and of the senses are one and the same, but their being (*to einai*) is different."[44] They are "one and the same," because both show the same ratio/proportion (say, 2:3), but they are different in being because the ratio/proportion is realized in different structures (e.g., the eye-jelly vs. the wooden surface of a table).

Here is how Julie K. Ward describes a sample episode of visual perception:

> Some visible object, say, a bunch of purple grapes, comes within the range of my vision. On the causal account, the specific ratio of the color affects the transparent medium, the air, which transmits the ratio to my sense-organs. My eyes, in turn, on account of their translucent qualities, allow the color ratio to pass onto the *korê*, the pupil, which, according to Aristotle, is moved and affected. The 'affection' of the sense-organ which is caused by the sensible object is explained by the fact that the initial balance, the

[43] See also DA III.2: "If voice is a sort of concord (*sumfonia*), and voice and hearing are in a way one, and concordance is a proportion (*logos*), it will be necessary then that hearing too will be a certain proportion."

[44] DA II.12 425b26–27, trans. Shields. See also III.2 426a15–17.

> perceptual *logos*, of the sense-organ, the eye, is altered by the incoming determinate ratio of purple: this alteration consists in the sensible difference between the two ratios, which is what the eye perceives as a specific color.[45]

If this is a correct interpretation, and it certainly seems to fit the texts, then Aristotle's seemingly obscure (and much-ridiculed) comments about the transmission of sensible forms should be understood in the context of a really rather sophisticated theory of perception and sensible qualities.

A further advantage of this interpretation is the light it sheds on a longstanding debate in the secondary literature about what exactly goes on in Aristotelian perception. So-called literalists, most prominently Richard Sorabji, focus on passages where Aristotle seems to be saying that the sense organ literally takes on the perceived quality, so that the eye-jelly becomes red when a red thing is perceived. In contrast, "spiritualists," taking their lead from Myles Burnyeat, focus on the passages where Aristotle describes perception as a distinctive kind of alteration (and perhaps not even alteration at all, strictly speaking) to suggest that Aristotle does not see perception as involving any sort of physiological process, but rather an irreducibly phenomenal event. There is nothing more to say than that the perceiver is appeared to in a certain way. Here are representative passages from supporters of each view:

> **Literalism**
> [Aristotle] goes on to remind us that the organ is colored during the perceptual process (425b225), and presumably we will be aware of its coloration. This coloration is a physiological process, which could in principle, even if not in practice, be seen by other observers, using ordinary sense perception.[46]

[45] Ward 1988, p. 224, with transliterations of her Greek.
[46] Sorabji 1974, p. 72.

Spiritualism

All that happens when Aristotle sees red is that (to use a more recent jargon) he is "appeared to redly" by an actually red object, and is so appeared to because the object is red. This gives the sense in which he is reddened by the red object, and comes (instantaneously) to be like it. The object's redness appears to him. He is aware of red.[47]

Both approaches have a firm textual grounding, and the interpretation just outlined points to a way of doing (partial) justice to each.[48] Spiritualism is correct in denying, first, that perception can be *reduced* to a physiological process, and, second, that the sense organ *literally* takes on the sensible quality. At the same time, literalism is correct, first, that there is a physiological aspect to perception and, second, that that physiological process involves the sense organ materially changing—but by taking on something structurally isomorphic to the sensible quality, rather than the sensible quality itself.

A final comment on Aristotle's theory of perception as discussed so far: the major explanatory focus in the second half of *De Anima* Book II is how the individual senses perceive their corresponding special sensibles. The account of perception in terms of form transmission and the interpretation of form transmission in terms of ratio/proportion cannot in any straightforward manner be applied to the common sensibles. For that reason it remains unclear how Aristotle understands what it is to perceive a distal environment composed of three-dimensional objects. Exploring that question takes us to the early chapters of Book III, where Aristotle introduces two important concepts that will round out his account of perception—the *koinê aisthêsis* (common sense or, *per* Shields,

[47] Burnyeat 2002, pp. 75–76.
[48] As noted in, e.g., Caston 2005.

common perception) and *phantasia* (imagination). These will be explored in the next chapter.

Further reading

Johansen 1998 is a book-length study of the sense organs in Aristotle. In addition to discussing the individual senses, chapter 2 is devoted to the concept of the medium. Unsurprisingly, sight has been more discussed than the other senses. Kalderon 2015 is a book-length discussion of color perception in Aristotle and Empedocles that engages with contemporary philosophy of perception. Mark A. Johnstone has tackled the other senses/qualities in a series of articles: odor and smell (2012), sounds (2013), and touch (2021). For proportion/ratio as the key to Aristotle's account of perception, see Ward 1988, Silverman 1989, and Corcilius 2022.

Key papers for debates about perception as the transmission of forms are Sorabji 1974 and 1992 (for literalism) and Burnyeat 1995 and 2002 (for spiritualism). Caston 2005 is a comprehensive overview of the debate, with full bibliographic details.

8

Perception and imagination

Focus Texts DA III 1–3
Plato, *Theaetetus* 184b–186e
De Memoria, particularly I

In the *Theaetetus*, as part of his efforts to convince Theaetetus that, *contra* Protagoras, knowledge cannot be perception, Plato's Socrates offers a very restricted picture of the scope of perception and what it can achieve on its own account. Socrates thinks that perception proper is restricted to the activities of the individual senses—corresponding, more or less, to what Aristotle is discussing in those chapters of DA II that describe the five senses. Anything more than this is done by what Socrates calls *psuchê*. As we saw in Chapter 1 and again in Chapter 4, however, Plato's Socrates has a much narrower way of thinking about *psuchê* than Aristotle does. From the perspective of Aristotle's classification of the hierarchy of cognitive capacities, what Socrates is talking about is much closer to what Aristotle places at the top of the hierarchy and considers to be uniquely human—the various intellectual abilities to think and reason that he terms *nous* and/or *dianoia*. So, Socrates is construing the realm of perception very narrowly—as the operation of the five senses. Anything that goes beyond this is an activity of the intellect, not of perception—which commits him to a correspondingly expansive conception of the realm of the intellect.

The focus on this chapter will be on how Aristotle takes exactly the opposite course.[1] Committed to thinking that intellectual

[1] Gregoric 2007 makes effective use of the contrast with the *Theaetetus* to frame the discussion of Aristotle's common sense. I am happy to follow his lead.

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abilities, strictly speaking, are confined to humans, he takes a very broad view of perception. This gives him a powerful explanatory framework for thinking about the behavior of non-human animals, as well as those forms of intentional behavior that are plausibly shared between human and non-human animals. The notion of imagination (*phantasia*) is at the heart of his analyses here. At the same time, his expansive approach to perception goes hand in hand with innovative accounts of some of the cognitive phenomena that Socrates cites in arguing for his expansive conception of the intellect. These include how we apprehend the common sensibles, such as shape, size, and number (in DA III.1), and the nature of reflexive awareness (in DA III.2).

Here is one way of framing the dialectical situation. We can see Socrates and Aristotle as both agreeing on what clearly falls within the domain of perception—namely, at a minimum, the operations of the individual senses in perceiving their appropriate special sensibles. They also agree, more or less, on what counts as the realm of the purely intellectual—namely, at a minimum, the operations of what Socrates calls *psuchê* and Aristotle *nous* and *dianoia*. But in between there is a grey area of cognitive abilities and capacities that are neither clearly perceptual, nor clearly intellectual. Socrates assimilates the grey area to the intellect, while Aristotle strives to co-opt it for perception.

Before engaging directly with the text, it is worth spending time on the overall structure of DA III, which is puzzling in a number of respects.

The first three chapters of DA III explore topics that seem to be continuous with the discussion of perception in DA II.[2] Then, in DA II.4 and DA III.5, he presents his famous discussion of *nous*,

[2] It is worth noting, though, that not everyone would agree. Aquinas comments at the beginning of what we know as DA III.1 that this would (contrary to a medieval tradition) be the appropriate place for a division between books because "from this point on Aristotle takes up his inquiry into intellect" (p. 292). That this is an odd thing to say is shown by the contents of this chapter, which discuss DA III.1–3 and in which intellect is barely mentioned.

which then continues in a more piecemeal fashion in DA III.6–8. At DA III.9 Aristotle turns to locomotion, which occupies him through DA III.11, which is followed by two somewhat patchy chapters (DA III.12 and 13) that pick up loose ends and review some earlier discussions.[3]

He explains his reasoning at the beginning of III.3, recapitulating at the beginning of III.9:

> III.3
> People define the *psuchê* principally by two differentiae: motion with respect to place and reasoning (*noiein*), discriminating (*krinein*), and perceiving (*aisthanesthai*). Both reasoning and understanding seem to be a sort of perceiving, for in both cases the *psuchê* discriminates something and comes to know things that are.[4]

> III.9
> Since the *psuchê* of animals has been defined in respect of two capacities, first, the faculty of judgement, which is the work of thought and perception, and further by its initiating locomotion, it is necessary to make an inquiry into the initiation of motion, letting just so much be determined regarding perception (*aisthêsis*) and reason (*nous*).[5]

In brief—perception and reason/intellect are both forms of judgment/discernment (*to kritikos*), and so they need to be considered together before going on to discuss locomotion.

[3] DA III.12 and DA III.13 do not fit obviously in the progression of Book III. Hutchison 1987 argues they dropped out of the text through some accident and were tagged on to the end for no particular reason. He thinks that they really belong between DA III.4 and III.5—in between the general discussion of *nous* and the highly compressed discussion of active reason.

[4] DA 427a17–21, trans. Shields.

[5] DA 432a15–19, trans. Shields.

There are several respects, however, in which Aristotle's stated principle for organizing the discussion in Book III 432a15–18 obscures some important aspects of his thinking, in particular the following:

- Taking the distinction between judgment/discernment and locomotion as a guiding principle is orthogonal to the classification that he sets up in DA II.3 and that he has used to structure the discussion up to DA III.3. According to his standard hierarchy, perception is the defining characteristic of the animal kingdom, while only a proper subset of animals are capable of locomotion. These non-sessile animals share the capacity for locomotion with human beings, who are uniquely characterized by possessing *nous*, which is the capacity at the top of the hierarchy.
- There are important differences between the "springs of action" in creatures that are capable of reasoning and those that are not. In the former case we have the model often described as the practical syllogism, while in the latter case we have a model grounded in perception and imagination. Aristotle highlights these differences throughout the discussion of locomotion.
- Connected to the previous point is that the quasi-perceptual capacity for imagination (*phantasia*) is introduced in DA III.3 and clearly falls under the general heading of judgment/discernment. However, *phantasia* cannot be fully understood without understanding its role in generating intentional behavior. By Aristotle's own lights, this suggests that judgment/discernment, on the one hand, and locomotion, on the other, are not separable (*chorista*) in the way that they would need to be to count as distinct capacities.
- The definitions that he refers to in the two quoted passages are clearly not his own. In both he just refers to things being defined a certain way (using the passive voice), and the first passage leads directly into a discussion of Empedocles and

> Homer. It seems odd for Aristotle, at *this* stage in the *De Anima*, to use the *endoxa* for as an organizing principle, for that surely is what he is doing.

Nonetheless, it makes sense to follow the order of Aristotle's own discussion in Book III, despite the tension with the organizational principle that he laid down in DA II and has been following up to now.

This chapter will explore Aristotle's discussion of the non-rational *psuchê*, focusing on the first three chapters of DA III. After presenting Socrates's view in the *Theaetetus* in Section 8.1, we will look at perception of the common sensibles (DA III.1) in Section 8.2 and then explore Aristotle's account of "perceiving that we perceive" (DA III.2) in Section 8.3. Section 8.4 will cover the discussion of the imagination in DA III.3. This part of the story will have to be incomplete, however. The full picture will have to wait until Chapter 10, when we will engage with his discussion in DA III.9–11 of intentional behavior in non-human animals, because we cannot fully understand the imagination without understanding its role in generating action.

8.1 Perception in the *Theaetetus*

In the *Theaetetus*, as part of his attack on Theaetetus's proposal to equate knowledge and perception, Socrates leads his interlocutor to accept a very thin understanding of perception. The overall strategy is clear enough. The narrower the view of perception Theaetetus can be brought to accept, the easier it will be to persuade him that there are types of knowledge that cannot be perceptual. Socrates's discussion provides an excellent frame for the opening chapters of DA III.

For our purposes, there are two aspects of Socrates's argumentation that need to be highlighted. The first is an image that he offers

early on in the exchange, which illustrates strikingly two very different ways of thinking about the senses and their role in producing knowledge. The second is the particular epistemic phenomena that he highlights in order to steer Theaetetus toward his (Socrates's) preferred way of thinking about the senses.

Socrates starts with an innocent-sounding question about the sense of sight and how it works. Do we see *with* the eyes? Or do we see *through* the eyes?[6] Although Socrates offers no context or indication of what he is trying to get at with the contrast, Theaetetus is quick to take the second option. Socrates is pleased and explains the significance of the choice:

> Yes, my son, it would be a very strange thing, I must say, if there were a number of senses sitting inside us as if we were Wooden Horses, and there were not some single form, soul or whatever one ought to call it, to which all these converge—something *with* which, through the senses, as if they were instruments, we perceive all that is perceptible.[7]

The contrast Socrates is drawing is explained by Burnyeat as follows:

> To say that we see with the eyes, hear with the ears, etc., is to say that it is our eyes which do the seeing, our ears the hearing, and so on—the 'with'-idiom is intended to pick out that element in a person which is responsible for their perceiving. The difficulty then arises that this makes it sound as if there are a number of senses ensconced in us, like the warriors in the Wooden Horse

[6] Grammatically, the first option is the dative of means, while the second uses the preposition *dia*. The dative of means is what Aristotle uses in the Rylean passage at DA II.4 408b13–15 discussed in Chapter 2 above: "Yet, saying that the soul is angry would be like saying that the soul weaves or builds. For it is perhaps better not to say that the soul pities, or learns, or thinks, but that the human being does these things with the soul."

[7] *Theaetetus* 184d1–6, trans. Levett in Burnyeat 1990.

> at Troy, each doing its own perceiving with no coordination between them. To avoid such a strange suggestion we may prefer to say that what we perceive with, i.e. what does the perceiving, is a unitary centre to which the separate senses converge-the soul or mind. The 'through'-idiom can now be summoned to define the role of the senses: they are the instruments or equipment "through which" we perceive with the soul, i.e. through which the soul perceives. (Burnyeat 1990, p. 54)

It is clear, of course, where Socrates is heading. For him the *psuchê* is the unitary center that coordinates the individual senses and makes the judgments that (he claims) the senses cannot make, either individually or together.

Which judgments are these? Socrates does not offer an exhaustive list, but it is apparent from the direction of his questioning that anything that goes beyond each sense detecting its own proper object falls outside the scope of perception, strictly speaking. The eyes can detect color. Hearing can detect sound. But anything that has to do with how color and sound are connected to each other is outside the scope of the senses. Key to his argument is the principle that nothing that can be perceived through one sense can be perceived through another. This principle, which he states explicitly at 184e8–185a3, has as an immediate consequence that there can be no objects of perception corresponding to which Aristotle terms the common sensibles. For Socrates, at least in the *Theaetetus*, the senses cannot deliver anything more than the perception of special sensibles. The point emerges very directly, when Socrates asks, "through what does this other capacity operate?," referring to the capacity to determine what is common across the senses and how the objects of the different senses relate to each other. Theaetetus obligingly replies:

> But *I* couldn't possibly say. All I can say is that it doesn't seem to me that for these things there is any instrument at all, as there is

> for the others. It seems to me that in investigating the common features of everything the soul functions through itself.[8]

The *Theaetetus* is a near-perfect foil for the position that Aristotle develops in DA III, particularly toward the beginning. It may well be the case that, in creatures possessing *nous* and associated discursive and reasoning abilities, there is a higher cognitive capacity that coordinates and passes judgment on the deliverances of the senses. But, on Aristotle's view, perception can, using its own resources, achieve much of what Socrates reserves for what he (Socrates) terms the *psuchê*. In particular, he argues, we have no need to go outside perception to explain what Theaetetus calls the "common aspects" (*ta koina*). Nor do we need to appeal to anything beyond perception to explain our awareness of our own perception. Finally, Aristotle rejects the view that Socrates puts forward in the following passage (and Theaetetus of course endorses):

> And thus there are some things which all creatures, men and animals alike, are naturally able to perceive as soon as they are born; I mean, the experiences which reach the soul through the body. But calculations regarding their being and their advantageousness come, when they do, only as the result of a long and arduous development, involving a good deal of trouble and education.[9]

Section 8.2 will look at Aristotle's account of perception of the common sensibles. In Section 8.3 we will examine how Aristotle thinks that we are aware of our perceptions. Finally, in Section 8.4 we will turn to the important, quasi-perceptual capacity of imagination (*phantasia*), which is both key to Aristotle's account of action and shared between human and non-human animals.

[8] *Theaetetus* 185d6–e2, trans. Levett in Burnyeat 1990.
[9] *Theaetetus* 186b11–c6, trans. Levett in Burnyeat 1990.

Before launching into DA III, however, a qualification and a disclaimer. There are various places within the *corpus aristotelicum* where Aristotle seems clearly to propose a physiological parallel to the view that Socrates espouses. In the *De Somno*, for example, Aristotle states that in addition to the five senses there is a "chief sense organ."[10] In line with his well-documented cardiocentrism, Aristotle locates this chief sense organ in the heart.[11] He does not go into great detail on what the chief sense organ is supposed to do, but the passage from the *De Somno* quoted in note 10 suggests that it is responsible for reflexive awareness, while he connects it to the operation of memory in the *De Memoria et Reminiscentia*.[12] Within the medieval Aristotelian tradition, this physiological idea was associated with Aristotle's use in the *De Anima* of the expression *koinê aithêsis* (often translated as common sense) and then somehow evolved into a full-fledged internal sense known as the *sensus communis*, to which was attributed a range of cognitive phenomena including the apprehension of common sensibles.[13]

It is not obvious how to reconcile what Aristotle says in the *De Anima* with this complex edifice that appears to have its foundation in the *Parva Naturalia*. It may even be impossible.[14] For present

[10] E.g., from *De Somno* 2: "Grant that each sense has something proper to it and something common: for instance, the act of seeing is proper to the sense of sight, the act of hearing to the sense of hearing, and the same goes for the other senses. Grant also that there is a common capacity accompanying all of them, by which one perceives that he is seeing and hearing. (For it is surely not by sight that one sees; and one discriminates, and is capable of discriminating, that sweet objects are different from white ones neither by taste nor sight, nor by both, but by means of some part that is common to all the sense-organs. For there is one sense and one chief sense-organ, though the being of perception is different for each genus, for example for sound and for colour)" (455a13–26, trans. Miller).

[11] There is a very clear statement at *De Somno* 456a1–6. See also *De Partibus Animalium* 656a27–30 (II.10), 665a10–15 (III.3), and 666a12–13 (III.4).

[12] At 450a9–14. This passage is discussed in Gregoric 2007, ch. 4.

[13] For an overview of the internal senses in the medieval Latin, Hebrew, and Arabic traditions, see Wolfson 1935. It is worth noting that it is far from obligatory to translate *koinê aisthêsis* as 'common sense.' The word *aisthêsis* is used by Aristotle to mean 'perception' as well as 'sense,' and both Hicks and Shields translate *koinê aisthêsis* at 425a27 as common perception.

[14] Certainly, apparent tensions between the *De Anima* and the *Parva Naturalia* were one powerful motivation for the developmental approaches to the *corpus aristotelicum* taken by Jaeger, Nuyens, and others.

purposes it is probably best to steer clear of these issues. The position developed in the *De Anima* has a compelling austerity that repays close attention without bringing in the "chief sense organ."

8.2 Common sensibles and cross-modal perception (DA III.1)

In DA III.1 Aristotle begins with an argument for why there cannot be more than five senses. Commentators have not generally been kind to this argument. Certainly, as a piece of probative argumentation, the considerations that Aristotle brings to bear are question-begging at best.

One illustration will suffice. The argument (which is all in a single sentence that Ross fittingly describes as "enormous," spanning as it does twenty-four lines in the Greek text) begins with the following claim: "For as things are we have perception of everything of which touch is the sense (for all qualities of the tangible, as tangible, are perceptible by us by means of touch)."[15] But how are we to define what counts as tangible and as a tangible quality? If the tangible qualities are the qualities that we perceive through the sense of touch, then we are moving in a very tight circle indeed. But how else can we understand a tangible quality? One possibility would be to distinguish between qualities that are detected through some form of contact and those that are detected through a medium. Let's call these the *proximal* and *distal* qualities, respectively. On this understanding, Aristotle's claim would be that all *proximal* qualities are detectable through touch. But why would one believe *that*? Certainly, it would be true if we defined the sense of touch as the sense that detects proximal qualities, but then we are back in

[15] DA III.1 424b24–26, trans. Shields.

our tight circle. How are we supposed to rule out the existence of a proximal quality that we cannot now detect but that we could detect if we had an appropriate sense-organ?

This is really the rub. That question makes good sense to us, but it would have made little sense to Aristotle. Aristotle's vision of the world is not one that places much stress on the possibility of massive error or irremediable ignorance. From his teleological perspective, our sense organs are optimally adapted to the environment we find ourselves in. This is part and parcel of the deep-rooted perceptual realism discussed in earlier chapters. Aristotle ends the enormous sentence by saying: "Consequently, unless there is some other element as well as a quality belonging to none of the bodies here now, no sense would be left out."[16] To the modern eye, this seems an extraordinary qualification, essentially granting that the entire argument is question-begging. But for Aristotle, one might think, this is more a case of pointing out for the sake of completeness a condition that does not really need serious consideration. Perhaps a note of irony?

Be that as it may, more significant with respect to his overall project is the conclusion that Aristotle immediately draws. If there cannot be more than five senses then there certainly cannot be a sense dedicated to the perception of the common sensibles. The way in which he formulates the point has given some pause for thought. He writes: "Moreover, there cannot be some special sensory organ for the common sensibles, which we perceive co-incidentally by each sense—for example, motion, rest, shape, magnitude, number, and unity."[17] This form of words is puzzling because Aristotle was very clear, back in DA II.6, that the common sensibles are *not* perceived co-incidentally (*kata sumbekêkos*) but

[16] DA III.1 425a11–13, trans. Shields, although I have put 'element' for his 'body.' Aristotle does indeed double up on the word *sôma*, but I think that the argument requires the first occurrence to refer to a hypothetical element other than the four sublunary elements. Compare Ross's summary (1961, p. 268).

[17] DA III.1 425a14–16, trans. Shields.

rather in their own right (*kath' hauta*). The rest of this section repeatedly emphasizes that same point.

John Philoponus saw clearly what is going on here. The relative clause does not state Aristotle's view, but only the view of the person who holds that there is a special sense organ (and corresponding sense) for the special sensibles. Philoponus takes Aristotle to task for expressing himself loosely, observing that confusion would have been avoided had he written "which we *would* perceive" rather than "which we perceive."[18]

In fact, Aristotle's argument is precisely that there there cannot be a special sense for the common sensibles because if there were such a sense then the common sensibles would be perceived co-incidentally, which they obviously are not. Aristotle allows that a given sense can co-incidentally perceive the *special* sensibles associated with another sense, but he is very clear about the conditions on which such co-incidental perception is possible. There has to be a process of learning. Specifically, the perceiver has to learn to associate the special sensible detected by one sense with the special sensible detected by another. We can, Aristotle grants, see that something is sweet, but only because experience has taught us, for example, that honey, this thing that is yellow, is also sweet: "we perceive the sweet by sight: this occurs because we as a matter of fact have a perception of them both, by which we come to know them at the same time when they occur together."[19] But no such process of learned association across sensory modalities is required for the perception of special sensibles. Any given common sensible is perceived directly by any sense capable of perceiving it.

Although Aristotle does not go into the specifics of how the direct perception of common sensibles actually works, it seems, from the suggestive remarks at DA III.1 425a16–20, that Aristotle is

[18] Philoponus 457, 18–19. Philoponus's suggested rewording (imperfect indicative with *an*) clearly conveys that the supposition would be contrary to fact.

[19] DA III.1 425a21–24, trans. Shields. Aristotle makes a similar point a few lines further on about learning to associate the bitterness of bile with its yellow color at 425b1–3.

committed to holding that we perceive common sensibles through variation in the special sensibles. When he says, for example, that we perceive magnitude and shape by motion (425a17), he presumably means that we take colored regions to be separate individuals with determine magnitude and shape to the extent that those regions move uniformly. Likewise, when those colored regions move independently of each other we perceive discontinuity and thereby numerical distinctness—which would certainly make sense of Aristotle's cryptic comment that we perceive "number in virtue of the lack of continuity" (425a19). This is all rather speculative, of course, but if well founded it would make Aristotle a precursor of contemporary discussions of how young infants learn to perceive objects and develop what is often called a naïve physics.[20]

But even supposing that something like this account is correct, it only tells us what it is for a given common sensible to be perceived by a given sense. It does not tell us how a common sensible perceived by one sense relates to that same common sensible perceived by a different sense—how shape perceived through touch relates to shape perceived by sight. One way to think about this is through the well-known question that William Molyneux posed to John Locke in a letter in 1688:

> Suppose a Man born blind, and now adult, and taught by his Touch to Distinguish between a Cube and a Sphaere (Suppose) of Ivory, nighly of the same Bignes, so as to tell, when he felt One and tother, Which is the Cube which the Sphaere. Suppose then, the Cube and Sphaere placed on a Table, and the Blind man to be made to see. Quaere whether by his sight, before he touched them, he could now Distinguish and tell which is the Globe which the Cube.[21]

[20] See Spelke 1988 for an influential presentation of this approach to infant perception—and the passage from Johnstone 2022 quoted in Section 6.5 above for further thoughts about how common sensibles might be directly perceived.

[21] Letter 1609 (July 7, 1688) in Goldie 2002, p. 182. See also Locke's *Essay* at II.ix.8.

Molyneux's problem brings into sharp focus a contrast between two ways of thinking about cross-model perception of the common sensibles.

On one approach, there are distinct forms of perceptual experience corresponding to shape-by-sight and shape-by-touch. We learn by experience to associate these distinct forms of experience and on that basis come to learn that there is a single sensible quality, shape, that can be perceived through different modalities. In more modern terminology, we have different, modality-specific experiences of shape from which we eventually derive an amodal concept. On the second approach, in contrast, perception of the common sensibles is itself amodal, so that what we perceive through each sense is the same thing, namely, the roundness of the globe. There is no further question as to, for example, how roundness-by-sight is associated with roundness-by-touch.

The text of the *De Anima* does not point unequivocally to one or other way of thinking about how the common sensibles are perceived, but the closing sentences of DA III.1 do provide some support for the second. Aristotle wonders why we have many senses, rather than just one:

> Or is it so that the accompanying common things (e.g., motion, magnitude, and number) will be less likely to escape our notice? For if there were only sight, and if it were of white, such objects would be more likely to escape our notice and it would seem that all things were the same because color and magnitude concurrently accompany one another. As things are, since the common objects are also present in some other sense object, this makes clear that each of them is something distinct.[22]

The final sentence is significant. Aristotle is talking about *ta koina* (the common things, i.e., the common sensibles). These

[22] DA III.1 424b5–11, trans. Shields.

are properties of objects, and when Aristotle says that they "are present" (*huparchei*) in different senses it is natural to read this as saying that when a common sensible is perceived by more than one sense, each sense perceives the same thing, so that sight and touch both perceive roundness *simpliciter*, as opposed to roundness-by-sight and roundness-by-touch, respectively. That, at any rate, would provide the epistemic security that Aristotle wants to derive from the existence of multiple senses.[23]

Be that as it may, returning to the contrast with the Theaetetus, it is important to recognize that on either way of responding to Molyneux's question, Aristotle would still come out as offering a radical alternative to Socrates's ultra-intellectualist view of the scope of sense perception (as described in Section 8.1 above). Even if cross-modal perception requires associations to be formed and learned between modality-specific perceptions of the common sensibles, this would still not be an *intellectual* activity. It would remain within the scope of perception—not for nothing was the association of ideas the method of learning most favored by empiricists such as Locke and Hume and by their modern descendants, behaviorists and neural network modelers. Associating ideas is not an intellectual activity. And so, there is no reason, on Aristotle's view, to restrict perception of common sensibles to reason-possessing humans, as Socrates clearly wants to do.

8.3 Perceiving that we perceive (DA III.2)

One of the roles that Socrates assigns to the intellect (what he terms the *psuchê*) in the *Theaetetus* is reflection on the deliverances of the senses. We have already discussed one aspect of what Socrates thinks can only be done through reasoning and intellection,

[23] Ross 1961 speaks of "a perceptive power inherent alike in each of the five senses" (p. 271). For more recent discussions see, for example, Modrak 1981 and Gregoric 2007.

namely the perception of the "common things," which Aristotle places firmly in the perceptual and not the intellectual realm. We turn now to something that is implicit throughout Socrates's discussion. Let us look again at a key passage from the *Thaeatetus*:

> There will be some things, then, that human beings and animals alike are naturally able to perceive as soon as they are born, namely those things the experience of which extends through the body to the soul; whereas calculations (*analogismata*) about these, in relation to their being, or the benefit they bring, come, to the people to whom they do come, only with difficulty, late on, and after much trouble and education? (186b11–c6)

Only the *psuchê*, Socrates thinks, can make calculations about the deliverances of the senses. But any such calculation requires being aware that we are perceiving the things that we perceive. Or, to put it another way, it requires that our perceptions be conscious in the right sort of way for us to reflect on them and deliberate about what they tell us about the world.

It seems plausible that Socrates is making something like the following distinction. Non-rational animals can perceive the world and respond to the stimuli that they can detect through the individual senses. They are properly described as being conscious of the world, but they are not conscious of their own perceptions. For the Socrates of the *Theaetetus*, to be conscious of one's own perception involves a level of reflexive awareness that is a specifically intellectual achievement. It cannot come from the senses unassisted by the cognitive powers of the *psuchê*.

Aristotle tackles the problem of how we are reflexively aware that we are perceiving in DA III.2. In line with his discussion of the common sensibles, he locates reflexive awareness within the realm of perception. The discussion is compressed but rewarding. It is in two parts. He starts by arguing for a particular position, and then he considers an objection. Here is the initial argument in full:

> Since we perceive that (*aisthanometha hoti*) we are seeing and hearing, it is necessary that one perceives that one sees either by sight or by some other sense. But then the same sense will be of sight, and of the underlying color, with the result that either there will be two senses of the same thing or a sense will be of itself. Further, if the sense which perceived sight were to be other than sight, then either this will carry on into infinity or there will be some sense which will be of itself, with the result that one should grant this in the case of the first sense.[24]

An initial point. There is something a little puzzling about how Aristotle sets the issue up. What exactly is the phenomenon of 'perceiving that we perceive'? Why does he use the vocabulary of perception at all? Shields notes that the 'we perceive that' (*aisthanometha hoti*) construction is unusual for Aristotle.[25] He suggests that Aristotle is taking the verb in a more general sense, as a verb of intellectual perception, citing a passage in the *Nicomachean Ethics* VI.9 where we perceive that a triangle is the end of a series of figures. He then goes on to suggest that Aristotle is exploring the much more general phenomenon discussed above—our awareness that we are seeing, or hearing.

The parallel with geometry might seem to suggest that Aristotle is focusing on a fairly high-level intellectual achievement. Another English word that could be used for the mathematical case would be "apprehend." But it would seem unusual in most contexts to describe oneself as "apprehending" that one is seeing, or that one is hearing. And if Aristotle does think that this is what is going on, then it would be odd for him to open the discussion by saying that this phenomenon can only take place through one or other of the senses. After all, we do not perceive that geometrical propositions

[24] DA III.2 425b12 12–17, trans. Shields.

[25] A more standard construction would be for the verb to take a participle or an infinitive with accusative subject (see LSJ, *aisthanomai*, under II).

hold through the senses (although we might reason using images, drawing geometrical conclusions is still a process of reasoning). So, someone impressed by Socrates's position in the Theaetetus might reasonably suggest that Aristotle is begging the question right from the start. Why does he implicitly assume that the intellectual capacities are not engaged?

Shields is surely right that Aristotle is exploring a more general notion of awareness, but another passage from the *Nichomachean Ethics* that also uses the *aisthanometha hoti* construction both provides a better clue as to what is going on and explains the disjunction with which Aristotle begins. This passage is part of a long explanation for why the life of the blessed person is intrinsically desirable. I will quote just the part most relevant to the current discussion:

> But if life itself is good and pleasant (which it seems to be from the very fact that all men desire it, and particularly those who are good and blessed; for to such men life is most desirable, and their existence is the most blessed) and if he who sees perceives that he sees, and he who hears, that he hears, and he who walks, that he walks, and in the case of all other activities similarly there is something which perceives that we are active, so that if we perceive, we perceive that we perceive, and if we think, that we think; and if to perceive that we perceive or think is to perceive that we exist (for existence was defined as perceiving or thinking)…[26]

The reference in the final parenthesis is to the statement a few lines earlier that "life is defined in the case of animals by the power of perception, in that of man by the power of perception or thought."[27] The structure of the passage shows that Aristotle is envisaging two forms of awareness: a form of awareness that is common to animals

[26] EN IX.9 1170a25–1170b1, trans. Ross, revised Urmson in ROT.
[27] EN IX.9 1170a16–17, trans. Ross, revised Urmson in ROT.

and humans (the capacity to perceive that one is perceiving) as well as one that is unique to humans (the capacity to perceive that one is thinking). Both forms of awareness, in both humans and animals (but of course differently in each case), are integral to the individual organism's sense of its own existence and to the value that it finds in that existence. Such awareness is not restricted to humans. It is an essential part of what it is to be a living organism.

Returning to DA III.2, at this stage in the *De Anima* Aristotle is still exploring the perceptual capacity that is common to all animals, human and non-human. That is why he sets the discussion up the way he does. If he is explaining something that is shared by all animals, then he has to remain within the general sphere of perception. So, the awareness that one is seeing, for example, can only come from perception. Which means that it must come either from sight or from some other sense. He argues by *reductio*, eliminating the second possibility.

Let us look at the details of his compressed discussion. Recall that he starts with a disjunction—either we perceive that we see by sight, or by some other sense. Here is the subsequent discussion broken down in steps with commentary:

A *But then the same sense will be of sight, and of the underlying color, . . .*

Conscious perception is, in G. E. Moore's much-discussed phrase, transparent or diaphanous. We cannot perceive *that* we see without at the same time perceiving *what* we see. If we perceive that we are seeing a temple then we are *ipso facto* perceiving a temple. And this will be true on both horns of the dilemma, because it holds of conscious perception in general.

B *. . . with the result that either there will be two senses of the same thing or a sense will be of itself.*

Aristotle writes simply that there will be "two of the same" (*duo tou autou*). Two what of what? It could be that there are two senses focused on one thing, or two perceptions of one

thing—the same word, *aisthêsis*, would cover both. Either way, the object can only be the special sensible color. This would be an unwelcome conclusion. Since color is a special sensible, any other sense perceiving it would only be able to do so co-incidentally (*kata sumbekêkos*). This would not be a promising way to develop an account of conscious perception. But the second option is not without problems. It is not obvious how a sense/perception can be of itself. Aristotle does not go into details, but the difficulty is plain. Neither senses nor perceptions are physical magnitudes, and so how can they be perceived?

C. *Further, if the sense which perceived sight were to be other than sight, then either this will carry on into infinity or there will be some sense which will be of itself, with the result that one should grant this in the case of the first sense.*
But still, Aristotle concludes, we should choose the lesser of the two evils, because whichever path one takes one will end up with a sense/perception that perceives itself, on pain of an infinite regress—and so it would be preferable to have that form of self-perception at the ground floor, as it were. And (although he does not make it explicit) doing so avoids the problem identified in (B) of their being multiple perceptions of a single common sensible.

This last step of the argument in (C) needs further discussion. Aristotle seems to have in his sights a form of what we would now term a higher-order theory of consciousness.[28] It is a common objection to higher-order accounts that they lead to regress. If what makes a perception conscious is that it is the object of a further thought or perception, then that further thought or perception would need to be the object of a third thought or perception, and

[28] Caston 2002 is an illuminating discussion of DA III.2 in the context of contemporary discussions of consciousness.

so on. Aristotle seems to be offering an early version of this objection. It is not compelling, however. The objection assumes that a higher-order mental state can only confer consciousness if it is itself conscious. Without that assumption the regress does not get started. But, not only is the assumption unmotivated, it would actually make the account circular, by presupposing what it sets out to explain.[29]

Aristotle's regress argument is less compelling than it is standardly taken to be, therefore. But the considerations in (B) still have force, and are sufficient to carry the conclusion. But what, one might reasonable ask, is that conclusion actually stating? How can a single *aisthêsis* simultaneously perceive the relevant special sensible, and that it is perceiving that special sensible?

Caston 2002 provides a helpful diagram (included here as Figure 8.1) to illustrate one possible way of understanding Aristotle's account.

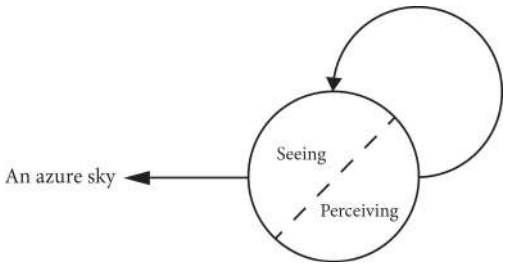

Figure 8.1 Caston's interpretation of Aristotle on perceiving that we perceive (diagram 4 in Caston 2002).

As Caston presents him, Aristotle is proposing a reflexive version of a higher-order theory, in which a single act of perception is both first order (perceiving the world) and second order (perceiving that it is a perception). This is certainly an innovative view, and

[29] This reply to the regress objection is frequently made by proponents of higher-order theories—e.g., in the influential discussion in Rosenthal 1986.

Caston is correct that it goes against the grain of contemporary discussions of consciousness. But there may be a reason for this. It is not obvious how to make sense of a state that is simultaneously directed both at the world and at itself.

Aristotle is clearly aware of the problem. He immediately goes on to suggest a potential problem for his account, namely, that it entails that "that that which sees will have color in a primary way."[30] This follows because (a) we perceive that we see by sight, and (b) the primary object of sight is color. It is not entirely clear how he responds to this problem, as his discussion is a little aporetic, but a couple of points do emerge reasonably clearly. First, he definitely tries to meet the problem head on:

> And, moreover, that which is seeing is in a sense colored. For the sensory organ is in each case receptive of the object of perception without its matter; and for this reason, even when the objects of sense have gone away, perceptions and imaginings remain in the sensory organs.[31]

This strategy is not very persuasive, however. The (first personal) awareness that I am perceiving seems completely different from the (third personal) perception of some colored activity in my visual system. For one thing, the first is available only to me, while the second is in principle available to anyone with appropriate observational equipment.

Perhaps, though, it is a mistake to think that we see that we see in the same way that we see the blue of the sky. Certainly, Aristotle cautions us against doing that immediately after raising the worry we are considering: "It is evident, then, that perceiving by sight is not one thing; for even when we are not seeing we discriminate (*krinomen*) light and darkness by sight, though not in the same

[30] DA III.2 425b19–20, trans. Shields.
[31] DA III.2 425b22–25, trans. Shields.

way."[32] As one might expect, Aristotle thinks that "perceiving" is said in many ways. This is worth exploring further. Both the worry that Aristotle is considering and the interpretation put forward by Caston assume that "perception" is univocal. In particular, they assume that we see that we see through some sort of mental act that is directed at an act of perception—an assumption that also underlies all versions of the higher-order theory of consciousness. But if we take seriously the illustration that Aristotle gives, we should look for a way in which we might *discriminate* that we are perceiving.

Here is a speculative suggestion. Instead of thinking of awareness that we are perceiving as a kind of mental act directed at our own perceptions, perhaps we could (and should) think of that awareness as internal to the content of the perceptual act—as a structural feature of the *content* of the perceptual act, rather than as something derived from an act of awareness. Support for this sort of view comes from the ecological approach to perception associated with the psychologist J. J. Gibson. Gibson emphasizes that perception typically carries information both about the environment and about the perceiving subject. The perceiving self is a constant presence in the perceptual field, most obviously in vision, where the visual field is structured by the point of view of the perceiver. This idea is strikingly illustrated in a well-known self-portrait (Figure 8.2) by Ernst Mach.

And, as Gibson emphasizes, much of our perception of the world is in terms of *affordances*, that is, in terms of the opportunities that objects and situations present for the perceiving agent. We see things as to-be-grasped, or to-be-eaten for example.[33]

It would be stretching the bounds of responsible interpretation to attribute these ideas directly to Aristotle on the basis of DA III.2, but they do represent a plausible way of developing some of the key insights from the brief discussion of awareness and self-awareness

[32] DA III.2 425b20–23, trans. Shields.

[33] See Gibson 1966, particularly ch. 7. For a more general account of nonconceptual self-consciousness see Bermúdez 1998 and the essays in Bermúdez 2018.

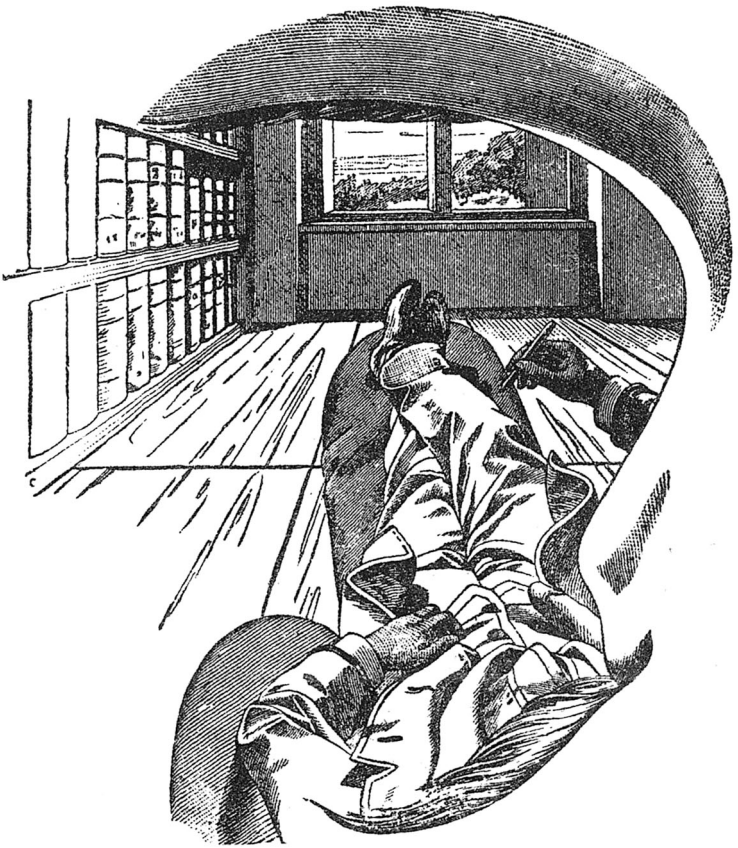

Figure 8.2 Mach's self-portrait (Mach 1914. PD-US).

in this chapter, and are certainly consistent with the discussion later in Book III, particularly in III.7 and then in the analysis of animal motion in DA III.9–11 (see Chapter 11).

8.4 What is *phantasia*?

DA III.3 is the final chapter before Aristotle moves to the intellectual capacities of *nous* and *dianoia* in DA III.4 and DA III.5. At

first appearance, this chapter is somewhat puzzlingly organized. It opens with a brief discussion of a thesis attributed (not very accurately) to Homer and Empedocles—namely, that there is no real distinction to be drawn between thinking (*noiein*) and understanding (*phronein*), on the one hand, and perception, on the other. Aristotle quickly dispatches this position on extensional grounds ("all animals have a share of the one, but only a few of the other"; 427b7–8). He immediately goes on to make an expanded version of the same point that connects it to the possibility of error:

> Nor, moreover, is reasoning in which there is a right and a wrong—understanding and knowledge and true belief being right, and the opposites of these being wrong—nor is this the same as perceiving. For perception of exclusive objects is always true, and belongs to all animals, whereas reasoning can also be false, and it belongs to nothing which lacks reason.[34]

There then immediately follows the first mention of the main topic of DA III.3—*phantasia*, most often translated as 'imagination.' The transition is puzzling: "For imagination (*phantasia*) is different from both perception and reasoning (*dianoia*), and it does not come about without perception, and without this there is no conceiving (*hupolêpsis*)."[35] The particle *gar* (for) clearly indicates that this sentence is supposed to explain what precedes it. But the connection is not immediately apparent and requires some reconstruction.

The main part of the chapter contains a lengthy discussion of how *phantasia* is distinct from various different psychological states. A (possibly non-exhaustive, but definitely overlapping) list would include:

- conceiving (*hupolêpsis*)
- believing (*to doxazein*)

[34] DA III.3 427b8–14, trans. Shields.
[35] DA III.3 427b14–16, trans. Shields.

- knowledge (*epistêmê*)
- understanding (*phronêsis*)
- reasoning (*to noiein*)
- perception (*to aisthanesthai*)
- belief accompanied by perception (*doxa met' aisthêseôs*)
- belief acquired through perception (*doxa di' aisthêseôs*)
- an intermingling of belief and perception (*doxês kai aisthêseôs hê sumplokê*)

Few of those psychological states have been discussed in any depth so far in the *De Anima* (really only perception). Moreover, Aristotle does not state clearly what he takes *phantasia* to be until the discussion of what it is not is largely complete. And when he does get to it, his explicit statement is somewhat uninformative: "If, then, nothing other than imagination has the features mentioned (and this is what was claimed), then imagination would be a motion (*kinêsis*) effected by actual perception."[36] A natural way to read this would be as holding that *phantasia* is some sort of psychological mechanism that has its origin in perception.

So, we can extract from the discussion some sense of the work that the concept of *phantasia* is being called upon to play in Aristotle's psychology. It is clearly an important psychological mechanism, and we should try to understand the phenomenon by working backward from its explanatory role. In particular:

(1) The concept of *phantasia* has a fundamental role to play in explaining what makes error possible. For example, the operation of *phantasia* somehow explains why the sun looks to us to be a foot across, even when we are well aware of its cosmic size (428b3–4).[37]

[36] DA III.3 428b30–429a1, trans. Shields.

[37] This explanatory role for *phantasia* is particularly highlighted in Caston 1996 and Scheiter 2012.

(2) Aristotle points to the role of *phantasia* in generating animal behavior at the end of DA III.3. Further on, at 433a10, he suggests that imagination is "a sort of reasoning" (*noêsis tis*).[38] A natural way to take this would be to say that *phantasia* allows non-rational animals to go beyond the here-and-now and the immediate deliverances of the senses in order to solve problems and engage in rudimentary forms of planning.

Taking these two explanatory projects together with the brief characterization quoted earlier suggests the following schematic account: Aristotle's *phantasia* is a form of operation on the deliverances of the perceptual system that explains both how we can have mistaken perceptions and how non-rational animals can use perceptions to navigate the environment.[39]

Let us start with error. Aristotle is clear at various points that perceptual systems cannot (normally) be mistaken when exercised on their proper objects. The senses are highly reliable detectors of special sensibles.[40] They are less reliable at detecting common sensibles, which (as we saw in Section 8.2 above) is one of the reasons Aristotle proposes for many animals having more than one sense. But error is a much richer notion than the unreliability of the senses at detecting particular sensible qualities, tied as it is to the notion of representation. To take a well-worn example, thermostats can be more or less reliable detectors of the temperature, but they do not *represent* the temperature, and so they can only be described as being in error in a derivative sense. Aristotle clearly recognizes that error, properly speaking, requires perception to have a basic representational structure. It requires not simply detecting a

[38] But see Chapter 9 below at note 3.

[39] This line of interpretation of *phantasia* is developed in Nussbaum 1978, ch. 5, and Bolton 2005.

[40] E.g., at DA III.3 428b18–19: "Perception of exclusive objects is true, or is subject to falsity in the smallest degree" (trans. Shields).

quality, but rather in some sense perceiving *that* a particular individual has a particular quality:

> Secondly, perception is of something's being an attribute of something; and already here it is possible to be mistaken. For one is not mistaken *that there is white;* but if one says that this or that other thing is what is white, one is mistaken.[41]

This is a very interesting and important point for Aristotle to make, not least because it reveals a significant gap in his earlier discussions of perceptual objects. We have some idea of how the senses can detect special sensibles, and some (admittedly speculative) suggestions as to how common sensibles are detected by individual senses.[42] But Aristotle has not given us any indication so far in the *De Anima* of how we come to perceive *that* something has a certain quality.

There are, however, some clues elsewhere in his writings. A good place to start is with the final chapter of the *Posterior Analytics*, where he is considering the general question of how we acquire the basic knowledge that is the foundation for our grasp of first principles. This basic knowledge has to be acquired, he argues, and therefore we must have some capacity (*tina dunamin*) providing it. He continues:

> And *this* evidently belongs to all animals; for they have a connate discriminative capacity, which is called perception. And if perception is present in them, in some animals retention of the percept comes about, but in others it does not come about. Now for those in which it does not come about, there is no knowledge outside perceiving (either none at all, or none with regard to that

[41] DA III.3 428b19–22. The text is contested at this point, but the debate focuses on the first half of the quoted passage. The basic point about perception of whiteness is clear in all versions.

[42] See, for example, Sections 7.5 and 8.3 above.

> of which there is no retention); but for some perceivers, it is possible to grasp it in their minds. And when many such things come about, then a difference comes about, so that some come to have an account from the retention of such things, and others do not.
>
> So, from perception there comes memory (*mnêmê*), as we call it, and from memory (when it occurs often in connection with the same thing), experience; for memories that are several in number form a single experience (*empeiria*).[43]

What is being proposed here is a primitive empiricist model of how ideas are formed. It is empiricist in the sense that the operating mechanism appears to be association. Shortly afterward Aristotle talks of a "universal" (*katholou*), and so one might conjecture that he is describing the process by which a general idea is formed through the association of distinct perceptions, both actual and remembered.[44]

The significance of this is that some sort of general idea is required for the basic psychological act of perceiving that something has a certain quality. At its simplest, this psychological act is one of classification, namely, seeing that something falls under a given general idea—the idea of being edible, for example, formed by association from the individual perceptions of many edible things. And this psychological act is clearly subject to error. And when general ideas are in play, then those general ideas can themselves become associated to allow primitive forms of reasoning—perceiving that something is edible leads to perceiving it as something to be pursued, for example. These primitive forms of reasoning are surely accessible to non-human animals, and so we have, at least in outline, tools that will help tackle the two explanatory projects identified above.

[43] *Posterior Analytics* II.19 99b35–100a6, trans. Barnes in ROT. See also the related discussion in the first chapter of *Metaphysics* Alpha.

[44] For more on PA II.19 and how it relates to Aristotle's overall project in the *Posterior Analytics*, see Barnes 1993 at pp. 259–271 and Bronstein 2012.

What has this got to do with *phantasia*? The connection comes because Aristotle assigns the operations of memory to *phantasia* very clearly in the first chapter of *De Memoria*:

> To what part of the soul, then, does memory belong? It is evident that it belongs to the same part as imagination (*phantasia*). And things that belong to imagination are themselves also objects of memory, while those which do not exist without imagination are co-incidentally objects of memory.[45]

The discussion in *De Memoria* I bears some striking resemblances to the argument in DA IIII.3. For example, Aristotle is at pains to distinguish memory from both perception (*aisthêsis*) and conceiving (*hupolêpsis*), just as he is for *phantasia* in the *De Anima*.[46] And he emphasizes that memory is not an exclusively human ability.

It is clear that memory, considered in its entirety, is a richer psychological capacity than *phantasia*. In the first chapter of *De Memoria*, Aristotle analyzes memory in terms of a memory image together with a perception of pastness. For that reason, memory, strictly speaking, is available only to creatures with a sense of time. It is *phantasia*, however, that makes memory possible, because *phantasia* is responsible for preserving, manipulating, and associating perceptual images. Without those operations there would be no memory, no concept formation, and no judgment. On this way of thinking about Aristotle's concept of *phantasia*, it is not too fanciful to see it looking ahead both to the English empiricists and to the role that the imagination plays in Kant's *Critique of Pure Reason*.

Within the more immediate context of DA III.3, Krisanna Scheiter explains how this approach to understanding *phantasia* can help make sense of the memorable example that Aristotle gives

[45] 450a24–27, trans. Miller.
[46] At 449b27–28, trans. Miller.

of perceptual error, which is that the sun can perceptually appear to us to be a foot across, even though we know full well that it is many times larger than the inhabited earth:

> When we say the sun appears to be a foot in diameter, we are comparing our perception of the sun to other past sense perceptions (or perhaps even current perceptions). We are recalling other objects that have had a similar effect on our eye and have turned out to actually measure a foot in diameter. Thus, to say that something appears to be one way or another is simply to say that the present perception I have of X is very similar to my image of Y and so X appears to be Y.[47]

One way of glossing Scheiter's analysis is that the operations of *phantasia* allow Aristotle to develop a way of thinking about the content of perception on which it can represent the world as being a certain way, independently of any beliefs that one might have about what one is perceiving—and indeed, potentially conflicting with those beliefs.[48] As we will see in Chapter 10, Aristotle thinks of perception as being able to represent the world independently of beliefs in an even richer sense. He allows for non-human animals to represent the world even though they are not capable of entertaining beliefs about the world, and this plays an important role in his account of the springs of action.

If this way of thinking about *phantasia* is correct, then we need to think about it as a set of mental operations that operate on the

[47] Scheiter 2012, pp. 274–275.

[48] There are interesting points of comparison with contemporary claims that perception has representational content that is nonconceptual. One of the arguments often cited is that the world can perceptually appear to us in ways that are inconsistent with our (conceptual) beliefs about it. Aristotle's sun example would be a worthy addition to the visual illusions often cited in this context. For an overview of the debate, see Bermúdez and Cahen 2020. We will return to *phantasia* and nonconceptual content in Chapter 10.

deliverances of the senses to yield perceptual (or quasi-perceptual) representations of the environment.[49] It is not straightforward, however, whether it counts as a capacity (faculty), in Aristotle's technical sense. Capacities are defined by their proprietary objects, and it is unclear that *phantasia* has proprietary objects in this sense. It is true that Aristotle does employ the term *phantasma* (often translated as "image") when he is talking about *phantasia* (e.g., at 428a1–5), but it is important to distinguish between the products of a capacity and the objects of that capacity. When Aristotle talks about *aisthêta* as the objects of perception (*aithêsis*), he is referring to the qualities and things in the world to which perception is directed. He uses a different word for perceptions themselves—that is, for the products of perception. These are *aisthêmata* (although he only uses the word twice in the *De Anima*, it turns up more frequently in the *Parva Naturalia*). Relatedly, the *phantasmata* are the products of *phantasia*. These are the perceptual representations produced by *phantasia*, not the objects of *phantasia*. The best candidates for being objects of *phantasia* are probably the *aisthêmata*, but I am not aware of any passage in which Aristotle actually suggests this—perhaps because he thinks that *phantasia* can operate on a wider range of things, including memory-traces, dream images, and the like.

8.5 Conclusion

The focus in this chapter has been on Aristotle's innovative approach to what we might think of as the grey area between what is purely and uncontrovertibly perception, on the one hand, and what is purely and uncontrovertibly thought, on the other. This grey area includes cross-modal perception of the common

[49] For a detailed development of *phantasia* in this spirit see Wedin 1988, particularly chs. 2–4.

sensibles—awareness of one's own perception, and the processes by which the deliverances of the senses become perceptual representations of the environment. In all three cases, Aristotle tackles the problem by expanding the realm of perception, making directly the opposite move to Plato's Socrates in the *Theaetetus*, who subsumes all three into the sphere of what he calls the *psuchê*, but which is a purely intellectual entity. This gives Aristotle a rich set of tools both to complete his investigation of the non-human *psuchê* and to enrich his discussion of the human *psuchê*, as we will see in Chapter 10, where we will return to *phantasia* and perception in the context of explaining action. First, though, we turn to Aristotle's discussion of *nous* and the intellectual capacities in DA III.4–6.

Further reading

Gregoric 2007 is a book-length study of various matters connected to common perception and common sensibles, incorporating extensive discussion of the *Parva Naturalia*. See also Kahn 1966 and Modrak 1981. Maudlin 1986 and Sorabji 1971 discuss the "no more than five senses" argument.

Caston 2002 is an influential discussion of Aristotle on perceiving that we perceive, reading Aristotle as offering a perspective on consciousness neglected in contemporary discussions. Sisko 2004 objects and Caston 2004 replies. See also chapter 9 of Johansen 2012 and Ierodiakanou 2022 for discussions from the Greek and Byzantine commentators.

The literature on *phantasia* is extensive. Wedin 1988, chs. 2–4, develops perhaps the most ambitious interpretation, on which Aristotle comes out as a proto-cognitivist. Caston 1996 and Scheiter 2012 focus on how *phantasia* explains the possibility of error. Schofield 1992 focuses on the connection between *phantasia* and perceptual appearance; Lorenz 2006, chs. 9–12 and Moss 2012 explore the role of *phantasia* in explaining animal behavior and its connection with appetitive desire (themes to be picked up in Chapter 10 below).

9

Varieties of *nous*

Focus texts DA III.4–7
Posterior Analytics II.19
Metaphysics Lambda (XII) 7 and 9

At DA III.4 Aristotle turns to the intellectual capacities, fulfilling promissory notes sprinkled throughout earlier parts of the text. These promissory notes have been tantalizingly elusive, often gesturing toward a potential future counterexample to some of the theses being maintained at that stage in the book. And so, a reader might well arrive at the discussion of *nous* with high hopes, not just that loose ends will be tied up, but that we will finally have a clear statement of Aristotle's considered position on some of the central questions explored in the *De Anima*—not least, the vexed question of whether the *psuchê* is in any sense separable from the body. Such a reader is likely to be disappointed. The discussion of *nous* raises far more questions than it answers—and potential answers to those questions often clash, not just with each other but often also with what appears to be "settled doctrine" from earlier in the book.

The challenges that these chapters pose on their own terms is exacerbated by key aspects of the historical tradition that has tried to interpret them. For many centuries, readers of Aristotle were seeking to unify Aristotelian doctrines either with theism (Islamic, Judaic, or Christian) or with Platonism, often with both. The elusiveness of Aristotle's discussion of *nous* provides plenty of opportunities for creative interpretation. Chapter III.5, in particular, is in danger of disappearing beneath the literally thousands of pages of commentary that have been devoted to its fifteen lines of

Aristotle's De Anima. José Luis Bermúdez, Oxford University Press. © Oxford University Press 2025.
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text (or thirteen, if Ross's omission of two lines in the middle is accepted). That III.5 has proved so alluring to commentators is largely because it is the most likely place in the *corpus aristotelicum* to find ideas about personal immortality and/or the relation between the human and the divine. That it has proved so hard to integrate with the rest of the *De Anima* is largely because these themes are at least *prima facie* at odds with the broadly naturalistic approach taken hitherto in the book and in the *Parva Naturalia*.

It is impossible to do full justice in a short chapter—or even in a long book, to the problems raised by Aristotle's discussion of *nous*, let alone to the range and subtlety of interpretations both ancient and modern. Even so, we can work through the basic outlines of Aristotle's approach to *nous*, while at the same time introducing some of the many exegetical controversies his discussion has provoked.

After a preliminary discussion of taxonomy and terminology in Section 9.1, Section 9.2 sketches out some of the uncontroversial starting points for thinking about *nous*, bringing out key continuities and discontinuities between the discussion here and earlier parts of the *De Anima*. Section 9.3 focuses primarily on DA III.4 and on the role of *nous* in generating thinkable objects from the deliverances of the senses. Section 9.4 offers a close reading of DA III.5, tentatively suggesting a way of doing justice to both of the two dominant approaches to the text.

9.1 *Nous*: Terminology and taxonomy

It is instructive to begin by reviewing the "grammar" of *nous*, before moving on to questions of classification and translation. As we saw in Table 6.1, Aristotle applies a consistent terminological framework to each of his psychological capacities. He has, first, a name for the capacity—in this case, *nous* (sometimes, *to noêtikon*). Then he has a verb characterizing the activity of exercising the relevant

capacity. Here it is *noiein*. This activity has its corresponding objects. These are *ta noêta* (singular = *to noêton*). Finally, Aristotle typically has a name for the activity itself—here *noêsis*. The activity corresponds to the exercise of the capacity.

There are two immediate issues to tackle. The first is taxonomical. We need to get clear on what exactly is covered by *nous*. How should we spell out the capacity in more detail? Which specific activities is he discussing? The second has to do with translation. Is there a single English word that captures the phenomena that Aristotle is pointing to? Satisfying this requirement is not straightforward. Any proposed translation would ideally be extendable to map onto the cognate terms identified above.

Starting with taxonomy, the very first sentence of DA III.4 delineates the topic of discussion. Aristotle states that he wants to investigate "the part of the *psuchê* by which the *psuchê* both knows (*gignôskei*) and understands (*phronei*), whether it is separable in magnitude (*kata megethos*) or purely in account (*kata logon*)."[1] He does not explicitly say that this part of the *psuchê* is what he terms *nous*, but that is a reasonable inference to draw from the continuation of the sentence, where he indicates that answering the question requires investigating how reasoning (*to noiein*) comes about. A few lines further on, he is more explicit, but with slightly different terminology: "and by *nous* I mean that by which the *psuchê* reasons (*dianoieitai*) and conceives (*hupolambanei*)."[2]

A natural way to take these characterizations would be to view *nous* as a collective or generic term, under which there fall several distinct types of intellectual activity—knowing, reasoning, thinking, judging, conceiving, and so on. There are certainly many places in the *De Anima* where *nous* and its cognates are used in this collective sense. From Aristotle's perspective, it is clear both that these are all uniquely human achievements, and that they form a

[1] DA III.1 429a10–12, trans. Shields. Ross has 'knows' and 'thinks.'
[2] DA III.1 429a23, trans. Shields. Ross has 'thinks' and 'judges.'

cluster united by more than family resemblance. So, it is not surprising that he should have a single word covering all of them.

In fact, at various points in the discussion of locomotion, Aristotle expands *nous* still further to include *phantasia* and perceptual judgments, so that *nous* extends to certain non-human animals. At the beginning of DA III.10, for example, he states that the two springs of action are *nous* and desire (*orexis*), allowing that *phantasia* might be a sort of *noêsis* (*noêsin tina*). It would probably be unwise, though, to take this as more than a metaphorical extension, as he immediately gets himself into a tangle, saying in the very next sentence that *noêsis* does not exist in non-human animals.[3] A more considered and plausible position is put forward at the beginning of DA III.3, where Aristotle describes both perception and thinking (*to noiein*) as forms of discriminating (using the verb *krinein*).[4] So, we can probably set this uber-expansive use of *nous* aside.

But Aristotle also departs from the generic sense of *nous* in the opposite direction, using *nous* in a much more restricted sense in two of the texts that have been identified as focus texts for this chapter. A striking example comes at *Posterior Analytics* II.19, where *nous* is associated with an infallible grasp of the first principles that are the foundation of every science.

> Since of the intellectual states by which we grasp truth some are always true and some admit falsehood (e.g., opinion [*doxa*] and reasoning [*logismos*]—whereas understanding [*epistêmê*] and *nous* are always true), and no kind other than *nous* is more precise than understanding, and the principles of demonstration are more familiar, and all understanding involves an account—there

[3] This might be a place to appeal to the so-called *tis alienans* promoted by Burnyeat, who cites this very passage (2002, p. 37, note 26). Per Burnyeat, Aristotle is not saying that *phantasia* is a sort of *noêsis*, but rather saying that it is a *noêsis* of a sort (i.e., not really one at all).

[4] Compare *De Motu* 7 at 700b17–22.

> will not be understanding of the principles; and since it is not possible for anything to be truer than understanding, except *nous*, there will be *nous* of the principles.[5]

Another important point of reference is *Metaphysics Lambda* (XII), where *noiein* is the characteristic (and only) activity of the divine unmoved mover. Here *nous* is even more rarified. The activity of *nous*, the *noêsis*, is reflexive. The divine *nous* thinks itself. It is itself its only object—or so at least the following lines seem to suggest.

> The nature of the [divine] *nous* involves certain problems; for while *nous* is held to be the most divine of phenomena, the question what it must be in order to have that character involves difficulties. . . . Therefore it must be itself that *nous* thinks (since it is the most excellent of things) and its *noêsis* is a *noêsis* on *noêsis*.[6]

Is the activity of the unmoved mover a sort of contemplation of first principles akin to that of the ideal Aristotelian scientist? Or is the scientific *nous* merely an approximation and pale copy of the divine *nous*?

In any event, however these questions are answered, we need to be clear that *nous* is far from univocal for Aristotle. At a minimum we should distinguish what might be termed the generic and the rarified senses. Part of the complexity of DA III.4–5 comes from the fact that it is often hard to determine whether *nous* is being used in the generic sense or in the rarified sense.

This complexity spills over into the thorny question of translation, because it places a further constraint upon an adequate translation, which would ideally also admit of both rarified and generic readings in English. It will probably not come as a surprise

[5] PA II.19 100b5–13, trans. Barnes in ROT.
[6] M XII.9, 1074b15–17 and 33–35, trans. Ross in ROT.

that there is no English word that maps fully, or even close to fully, onto Aristotle's use of *nous* and its cognates. In part, this is due to the general problem afflicting all translators, namely, that while all of the words to be discussed have subtly different uses in different contexts, the contexts of variation do not always map cleanly onto each other across languages. But there are also some more determinate problems specific to *nous* that arise for each of the five leading candidates:

Mind. This is the favored translation of *nous* in modern versions of the New Testament. It has the advantage of covering both the rarified and the generic uses. However, it lacks cognate terms to translate the cognate terms of *nous*. Since there is no activity of "minding" or anything that might correspond to the objects of *nous*, the unity of Aristotle's terminological framework would be completely lost.

Intellect. This is the translation that comes most directly out of the scholastic tradition. For Aquinas *nous* is *intellectus* and Latin is well equipped with cognates (e.g., *intellegere* to name the activity). Unfortunately, English is less well-equipped. We might reasonably use 'intelligible' or 'intellectual object' for *noêton*, but the lack of a verb (to intellegize?) is a serious shortcoming. Moreover, "intellect" seems more appropriate to the rarified sense of *nous* than to the generic sense.[7]

Reason is favored by Shields and by Ross. It fares better than mind with respect to cognates. We have "to reason" for *noiein*, "reasoning" for *noiêsis*, and "object of reason" for *noêton*. But the cognates also cause difficulties. One problem is that "reasoning" in English clearly suggests a process. The activity of reasoning is sequential and discursive. Paradigms might be solving a practical problem or proving a theorem.

[7] Fittingly, "intellect" is chosen by Judson in his translation of book Lambda of the *Metaphysics*, where the focus is on divine *nous*.

But Aristotle clearly thinks that the exercise of *nous* can involve single acts of intellectual apprehension (as in the apprehension of first principles). Moreover, "to reason" might not clearly distinguish *noiein* from *logizesthai* and *dianoieisthai*.

Thought is used by Miller in his 2018 translation. As with "reason," the cognates are ready to hand: "to think," "thinking," and "object of thought." It also has the advantage of being highly generic—knowing, conceiving, judging, and reasoning, for example, can all plausibly be described as modes of thinking. At the same time, there does seem to be a rarified notion of (pure) thought. Nonetheless, "thought" and "thinking" suffer from similar problems to "reason" and "reasoning." They are not easily applied to single acts of intellectual apprehension and do not leave as much clear blue water as one might wish between generic *nous* and other intellectual activities that might fall under it.

Understanding is adopted by Reeve in his 2017 translation. The corresponding verb has the advantage of a clear nondiscursive sense. There is no difficulty with the idea of understanding a first principle, for example. And "object of understanding" is acceptable for *noêton*. The problem with "understanding," however, is that it seems to be the result of an activity, not the activity itself. Understanding points beyond itself to the means by which it is acquired. We understand something because we have grasped it fully, for example, or thought it through.

All of these translations have clear merits, but equally clear demerits. One index of the difficulty of the task is that, as far as I am aware, nobody has managed to translate all of the occurrences of *nous* and its cognates in the *De Anima* uniformly using only one of the five translations just canvassed. Fortunately, we have a luxury that translators do not—we do not need to pick a translation and then stick to it as best we can. Instead, we can simply leave *nous* and

its cognates untranslated in most cases, while reserving the option to pick as appropriate from the menu of options with the Greek in parentheses.

9.2 The starting points for interpreting *nous*

There is much that is controversial and mysterious about Aristotle's discussion of *nous*. But at the same time there are some tolerably clear statements and theses that any account will have to accommodate. It makes sense to start from these.

Some of the things that Aristotle says about *nous* are, at first glance, continuous with earlier discussions.

(1) At various places during the discussion of his predecessors in DA.I, he has shown considerable skepticism about Platonic forms, and independently existing abstract objects. So, it is no surprise that the *noêta*, the objects of *nous*, while they are in some sense universal, are not independently existing universals.
(2) Aristotle has a deeply empiricist strand in his thinking. This runs through the *De Anima*, but is also clearly and explicitly laid out in the final chapter of the *Posterior Analytics* II.19, where he explains that, although first principles are grasped intellectually, this apprehension is the culmination of a process of induction that is firmly grounded in perception.
(3) As an illustration of his empiricism, Aristotle maintains at various points that all thinking requires images—for example, in DA III.7: "Consequently, the *psuchê* never thinks without an image."[8]

[8] DA III.7 431a16–17, trans. Shields. In his commentary Shields expresses some skepticism about the inference that leads Aristotle to this conclusion and wonders about whether the statement should really be taken at face value. As he notes, though, Aristotle makes similar claims in multiple other places: e.g., DA III.7 431b2–4 and DA III.8

(4) Aristotle maintains (some form of) an identity theory of thought, as he does for perception: "just as the perceptual faculty is to the objects of perception, so reason will be to the objects of thought."[9] This means that the object of thought is in some sense the same as the actualization of *nous* in an act of thinking.[10] This reflects his hylomorphism. The object of perception is a sensible form, and the object of *nous* is an intellectual form. In both cases, the form and the grasp of the form are "one and the same, but different in being."[11]

At the same time, however, Aristotle introduces some new ideas that are not so clearly continuous with his earlier discussions. In the background here is something that may or may not be explicitly stated in the *De Anima* (whether it is stated or not is a major exegetical question in making sense of DA III.5), but that is very clear elsewhere in the corpus, most particularly in *Metaphysics* Book Lambda:

432a3–10, as well as *De Memoria* 1 449b31–450a4 and 451a1–4. Shields suggests that the first of these passages (DA III.7 431b2–4) seems to qualify this claim, translating "the rational faculty thinks *some* forms in images" (my emphasis, to mark a point at which Shields diverges from many other translations, which typically have no such restriction). The source of the 'some,' he states in the commentary at p. 340 is the *ta men* in the text, which sets up a balanced contrast and is answered a long way further on by a *ta de* at 431b12. I think his reading is correct, but it's worth pointing out, that the answering *ta de* clause refers to thinking about abstract (e.g., mathematical) objects, and Aristotle seems to adopt an empiricist account of our thinking about abstract objects, which proceeds by a process of abstraction that begins with sense perception. Perhaps Aristotle is best taken as contrasting, not imagistic vs. non-imagistic thought, but rather two different ways in which thought can be imagistic: by having an imagistic content, on the one hand, and by being imagistically derived, on the other? For further discussion see below. Thanks to Bryan Reece for pressing me here.

[9] DA III.4 429a17–18, trans. Shields.

[10] The qualifications in the text reflect the difficulty of understanding Aristotle's view if identity is taken in a strict sense (as a relation that is reflexive, symmetrical, and transitive, obeying the principle of the indiscernibility of identicals). Later philosophers, often in the context of the theology of the Trinity, have developed notions of relative identity (on which *x* might be the same F as *y* without being the same G) that might be helpful here, but there is no evidence that Aristotle thought in these terms. For a subtle discussion and reformulation of Aristotle's own identity thesis see Lewis 1996, particularly section 1.

[11] See DA III.1 425b26–27 and 8.3 above for a discussion of how to understand the objects of perception as sensible forms.

(5) While *nous* is uniquely human in the *sublunary* realm, it is also shared with the unmoved mover that Aristotle equates with the deity (and perhaps with other unmoved movers, as Aristotle appears to postulate in Lambda VIII).

There are various places, most particularly in DA III.5, where it is most unclear whether Aristotle is discussing human *nous* or divine *nous*. The situation is further complicated because we find various predicates attributed to *nous* that seem deeply inconsistent with the broadly naturalistic approach that he has taken up to this point.

(6) In DA III.4 and III.5 he variously describes *nous* as

unaffected (*apathês*)
unmixed (*amigês*)
separate (*chôristos*)
separated (*chôristheis*)
deathless (*athanatos*)
everlasting (*aidion*)

As we will see, and simplifying somewhat, interpreters have taken two very different approaches to these descriptors. One group has found a theory of personal immortality in these two chapters, holding that what he is describing is an immaterial part of the *psuchê* that survives death. Another group claims that Aristotle has surreptitiously changed the subject and is really talking about divine *nous*.

A final source of perplexity is that, at the beginning of III.5, we find a puzzling distinction:

(7) Aristotle distinguishes two aspects or dimensions of *nous*—an active dimension and a passive dimension.

This distinction has been reified by the interpretive tradition into a distinction between two forms of *nous*—passive *nous*

(*nous pathêtikos*) and active *nous* (*nous poiêtikos*—sometimes termed maker *nous*). The terminology, and associated conceptual framework, has stuck, even though Aristotle uses the phrase *nous pathêtikos* exactly once in the *De Anima* and the phrase *nous poiêtikos* features not at all.

That all seven of these are to be found in the *De Anima* is incontestable. But that they can be made to cohere is far from clear. We will proceed in order, starting as Aristotle does in DA III.4 with the relation between *nous* and perception.

9.3 Perception and abstraction in DA III.4.

DA III.4 contains a sustained discussion of the relation between *nous* and perception. The first part of the chapter (from 429a10 to 429b9) explores analogies and disanalogies between the two capacities. These allow Aristotle to draw some preliminary conclusions about the nature of *nous*. The chapter then transitions into a subtle, but somewhat compressed, discussion of the nature of abstraction, which ends up telling us a lot about the objects of *nous* and how they relate to the objects of perception. This argument lasts from 429b10 to 429b22. Aristotle wraps up the chapter by considering two puzzles (429b23 to 430a9). The first has to do with the relation between *nous* and its objects, and whether those objects can properly be said to affect *nous* in the way that the objects of perception affect the senses. The second has to do with how *nous* can be an object to itself. We will focus in this section primarily on the first two parts, drawing on the third part primarily to illuminate the earlier discussion, rather than considering the puzzles on their own terms.[12]

[12] The reader seeking help with the puzzles should start with Shields's commentary at pp. 308–311.

As mentioned above, Aristotle holds that both perception and *nous* are in some sense identical to their objects. In an instance of perception, what is perceived is a form, and the perception of the form and the form itself are, he suggests, one and the same thing, but different in being. As proposed in Chapter 7, Aristotle's notion of a perceptible form needs to be treated with some caution, and there is much to be said for those interpreters who see the notion of proportion or ratio (*logos*) as key. A given shade of color, for example, is a certain proportion of white and black. That color is perceived when, and only when, the relevant proportion is realized in the sense organ, which is what yields the identity. Moreover, what makes a color perceptible is that the sense organ has the potential to realize the proportion of ratio that defines that color.

It is this idea of potentiality that Aristotle emphasizes in DA III.4. He does not directly specify what the objects of *nous* are, but instead makes a more overarching argument. His basic premise derives directly from the analogy with perception. Whatever its objects are, *nous* must be such that it can be "identical" to them, which means that it must be capable of becoming "identical" to them (i.e., it must be them potentially).[13] Moreover, even though he has not said what the objects of *nous* are, Aristotle takes it as given that they are not restricted in any way. As he crisply puts it at 429a18, "it reasons (*noiei*) all things." In some sense, Aristotle thinks, all things are thinkable, in the sense of being potentially objects of *nous*. We will return to what exactly this might mean shortly, but for the moment let's consider the conclusion that Aristotle draws from it:

> It is necessary, then, since it reasons (*noiei*) all things, that it be unmixed (*amigê*), just as Anaxagoras says, so that it may rule, so that it may know; for the interposing of anything alien hinders

[13] The scare quotes reflect the qualifications in the text above and in note 10.

> and obstructs it. Consequently, its nature must be nothing other than this: that it be potential.[14]

By "unmixed," Aristotle means "unmixed with anything bodily." This conclusion is a natural consequence of his discussion of the sense organs. Each sense is constrained in what it can perceive by limits imposed by the physical structure of its sense organ. The sense of touch, for example, can only detect temperatures that differ from the temperature of the tactile organ, because what it detects are differences from the mean. And, for every sense, when those differences from the mean become too great, because the stimulus is too intense, the sense stops functioning and may be permanently damaged. What might be described as the range of sensitivity of the sense is determined by the physical make-up of the sense organ. Since he thinks that *nous* has no limits of sensitivity, Aristotle concludes that it cannot have any sort of bodily organ.

As he develops that argument, Aristotle explicitly connects the "unmixed" nature of *nous* with the issue of separability that has come up at various points in the *De Anima*: "For the perceptual faculty is not without the body, whereas reason is separate (*chôristos*)."[15] And, for good measure, Aristotle also concludes that *nous* has to be "unaffected" (*apathês*). His reasoning is that being affected is a physical process and so could only apply to *nous* if *nous* were realized in some bodily organ. So, of the six predicates that were identified earlier as jarring somewhat with the broadly naturalistic tenor of earlier parts of the *De Anima*, three are derived from the comparison between *nous* and perception in the first part of DA III.4. This is important, because it is absolutely clear that

[14] DA III.4 429a18–22, trans. Shields. Of the surviving fragments of Anaxagoras, for whom *nous* appears to have been a sort of cosmic principle, the one that best fits Aristotle's reference here is B12, where Anaxagoras says that "*Nous* is unlimited and self-ruling and has been mixed with no thing, but is alone by itself . . . For it is the finest of all things and the purest, and indeed it maintains all discernment (*gnômê*) about everything and has the greatest strength." Translated in Curd 2007.

[15] DA III.4 429b4–5, trans. Shields.

Aristotle at this stage in the argument is discussing human *nous*. The distinction between active and passive dimensions of *nous* and the putative *nous poiêtikos* still lie ahead. We will come back to this.

First, though, we need to follow Aristotle in his explanation of what the objects of *nous* actually are. Aristotle approaches the matter obliquely in the complicated discussion that spans 429b10 to 429b22. Before broaching the argument, it is worth emphasizing that there really is a question here that Aristotle needs to answer. It seems clear that we cannot take "everything" to be a satisfactory answer, because there are plenty of things that are not, and cannot be, the objects of *nous*. None of the special sensibles, for example, can be an object of *nous*. It is not for *nous* to apprehend a particular sound, or shade of color, for example. That is why we have senses and sense organs. What Aristotle surely means is that, of all the things that are candidates to be objects of *nous*, none of them are in principle excluded from being objects of *nous*. But what are those things?

Aristotle's answer is to be found, somewhat camouflaged, in the first part of the discussion:

> Since a magnitude and being a magnitude differ, as also water and being water differ (and thus for many other cases, though not all, since in some cases they are the same), one discerns flesh and being flesh either by means of different things or by means of something in a different condition.[16]

The distinction that Aristotle is making here draws a clear line between objects of perception and things that, while we do in some sense apprehend them (taking "apprehend" in a completely neutral sense), cannot be objects of perception. We can perceive magnitudes, water, and flesh. But we also apprehend what it is to be a magnitude, what it is to be water, and what it is to be flesh. The

[16] DA III.4 429b10–13, trans. Shields.

expression that Aristotle uses to discuss these non-perceptual items is literally "the to be X" (*to einai* X). This is one of the expressions that is standardly translated as "essence," and it seems reasonable to understand Aristotle to be taking the *noeta* to be essences.[17]

It is a basic tenet of Aristotle's hylomorphism that every natural thing is composed of matter and form.[18] As discussed in Chapters 4 and 5 above, Aristotle typically takes "form" and "essence" to be close to equivalent.[19] And so, implicit in the passage just quoted is the thought that, while every natural thing in the sublunary realm is (at least in principle) a potential object of perception, the form or essence of that thing cannot be perceptually grasped. That we cannot perceive forms Aristotle takes to be a basic datum, not requiring further explanation. The question that he focuses on is how we apprehend forms/essences. The discussion is somewhat intricate. It overlaps with the much discussed chapter 6 in Book Zeta of the *Metaphysics*, but unfortunately that passages raises even trickier problems than this one and so should probably not be brought into the discussion.

It is reasonably clear that Aristotle is offering us a disjunction between two different ways of thinking about how we apprehend forms. He says that it is either by something else, or by means of the same thing as perceives perceptual objects but in a different condition. How to understand the disjuncts, however, is not so clear. And nor is it clear which one he ends up favoring. One possibility, perhaps the simplest, is that by "something else" he simply means *nous*, so that the choice he is offering us is between saying that essences are apprehended by *nous*, on the one hand, and by the perceptual faculty "in a different condition," on the other. This would not be

[17] Compare Kahn 1992 at p. 370 and Shields 2016 at p. 306.

[18] As he mentions in the parenthesis in the quoted passage, there are some things that are identical to their essence. Ross (1961, p. 293) suggests that these are transcendental terms such as the good and beauty, citing *Metaphysics* 1031b11–13. In any event, whatever these things are, they cannot be "enmattered."

[19] For discussion of the relation between form and essence in Aristotle see, e.g., Woods 1975 and Irwin 1988, ch. 11.

terribly satisfying, however. For one thing, as mentioned, Aristotle does not take seriously the possibility that essences might be perceived, and so it seems odd for him to offer it as an option. In fact, it would be particularly puzzling, since Aristotle does not appear actually to select one of the two disjuncts in the abstraction argument, or anywhere else in III.4. The discussion ends by restating, in almost exactly the same language, the very disjunction with which it began. Why would he leave hanging a question to which his answer is very clear? We already know that essences cannot be perceived, and we also know that in some sense *nous* is what gives us knowledge of essences. So, what is Aristotle trying to do here?

It may be more promising to look at this passage, not as identifying the objects of *nous*, but rather as exploring how exactly it is that *nous* apprehends those objects, which he has of course implicitly announced to be essences. With that in mind, let's look at the passage in more detail. After distinguishing flesh from being flesh (i.e., the essence of flesh), he continues:

> For flesh is not without matter, but is rather just as the snub: a this in a this. One discerns by means of the perceptual faculty the hot and the cold, those things of which flesh is a proportion. But it is by means of something else, something either separate or something which is as a bent line is to itself when it has been straightened out, that one discerns being flesh.[20]

The reference to the snub is important. As discussed in Chapter 4 above, it is one of Aristotle's favorite examples to illustrate the relation between matter and form. The snub is the shape of a nose (most famously, Socrates's nose). This shape, considered in itself, is concave. But to be snub is not the same as to be concave, because snubness only applies to concavity in noses. This means that we cannot spell out what it is to be snub (the essence of snubness)

[20] DA III.4 429b13–18, trans. Shields.

without mentioning matter.[21] The parallel with flesh seems to be the following. Flesh (on Aristotle's analysis) is a certain proportion or ratio of hot and cold. As with the snub, simply specifying the ratio or proportion (3:1, say) is not enough. We need to specify the matter, namely what it is that the ratio holds between (the hot and the cold).

It seems highly likely that Aristotle intends this point to generalize to everything made up of matter and form. That has two immediate consequences. The first has to do with how we think about the essences of things that are composed of matter and form. The essence is the form, but the form cannot exist apart from the matter. Aristotle's forms are "enmattered" or "immanent" —in direct opposition, of course, to how Plato thought about form. The second has to do with how we apprehend them. Since they are of necessity enmattered, we have to start with perception, which is the basic tool we have for finding out about the material world. We cannot apprehend or grasp the essence of flesh without engaging the perceptual faculty. Our understanding of what it is to be flesh starts with the perception of a certain material thing, just as our understanding of what it is to be snub starts with the perception of a nose.

In other words, the objects of *nous* are essences, but we cannot apprehend essences directly (for anything that is not identical to its essence—i.e., anything that is enmattered). We have to start with deliverances of the senses. *Nous* operates by operations inextricably connected to perception, not by a process of disembodied intellectual cognition of the sort that a Platonist might envision. This may well be what Aristotle is getting at with his puzzling image of the bent line that is straightened. We might take the line that is bent to correspond to perceptions of, say, flesh. The straightening of the

[21] At various places in the *Metaphysics*, most prominently Zeta 5, Aristotle discusses the challenges that this poses for the separation of matter and form, and concomitantly for the nature and possibility of definition. See appendix 2 to Balme 1987, and the relevant sections of Bostock's commentary (Bostock 1994), for discussion of these difficult passages.

line corresponds to the intellectual process by which the essence of flesh is derived from perceptions.

It is intriguing that Aristotle immediately goes on to talk about "things that are by abstraction (*en aphairesei*)"—by which he means, paradigmatically, the objects of mathematics. Numbers and lines and points are not abstract objects for Aristotle.[22] They have no existence except to the extent that they are realized in the world. What makes mathematical reasoning possible is that we can abstract away from the details of the realization, treating a line, for example, as if it were one-dimensional, even though nothing in the world lacks thickness. Puzzlingly, Aristotle assimilates mathematical objects such as the straight (i.e., a line) to the snub, and hence by extension with all things composed of matter and form. He writes:

> Further, in the case of things which are by abstraction, the straight is as the snub is, since it is with extension. The essence, though, if it is the case that being straight and the straight differ, is something else. For let it be the number two: then one discerns it either by different things or by something in a different condition.[23]

One way of interpreting this passage would be as maintaining that *nous* operates in general by a process of abstraction, so that *nous* arrives at the essence of, say, flesh in much the same way as it arrives at the abstract geometrical concepts of line and point. This is certainly how the operation of *nous* was understood by Aquinas.[24]

[22] Aristotle's account of mathematics and mathematical objects is primarily to be found in *Physics* II.3 and *Metaphysics* Mu (XIII) 3. Lear 1982 is a good introduction.

[23] DA II.4 429b 18–21, trans. Shields, although I have put "the number two" where he gives "two." Aristotle's use of the dual *estô* speaks to "two," but the context, and the somewhat unusual word *duas*, suggests "duality" or "the number two," as Aristotle seems to be referencing Pythagorean or Platonic doctrines about the nature of lines.

[24] Both in his commentary on the *De Anima* and in his discussion of the intellect in the *Summa Theologica* (e.g., at I.85.a1 and I.85.a2).

Such an interpretation would be potentially misleading, however. Abstraction works, in effect, by filtering out and ignoring extraneous elements. When we consider a line, for example, as the shortest distance between two points we ignore the breadth or thickness that all real lines have. In other words, we strip away what is extraneous from the perspective of mathematical reasoning to focus on what is essential. That might be the way that some of the English empiricists thought about how we acquire general concepts, but it does not sit well with Aristotle's general views about form and essence. As emphasized in Chapter 4, form and essence are primarily scientific notions for Aristotle. They are teleological. In the case of living organisms, for example, form/essence is tied to the good for the organism, which itself is a function of its characteristic activities and characteristic function. For that reason (as Aristotle's own scientific writings bear eloquent testimony) uncovering essences will typically involve empirical investigation and experiment. Even in the case of flesh, it is hard to see how anything like the process of abstraction that generates suitable objects for mathematics will tell us that the essence of flesh is, say, a hot:cold ratio of 3:1.

It seems more likely, therefore, that Aristotle is seeking to draw a contrast between mathematical and non-mathematical essences, than that he is trying to assimilate the latter to the former. Certainly, both are grasped by *nous*, but by very different processes. One major lesson to draw from Aristotle's discussion in this part of III.4 is that the operations of *nous* are inextricably linked to perception. He makes the point very clearly in DA III.8:

> Since there is nothing beyond perceptible magnitudes, as it seems, nothing separate, the objects of reason are in perceptible forms, both those spoken of in abstraction and all those which are states or affections belonging to the objects of perception. And because of this, one who did not perceive anything would neither learn nor understand anything, and whenever one

> contemplates, one necessarily at the same time contemplates a sort of image (*phantasma*); for images are just as perceptions are, except without matter.[25]

This certainly reads like an endorsement of some form of empiricism.[26] And this passage does seem to provide a fitting summary of Aristotle's discussion of *nous* and perception in DA III.4, which brings us back to the basic tensions that were brought out in Section 9.2 above. How can this eminently sensible and down-to-earth account of intellectual cognition be reconciled with the more extravagant ideas that have been attributed to Aristotle, particularly in the context of the next chapter, DA III.5?

As a first step, it will be helpful to take stock of where we are at the end of DA III.4 with respect to the question with which the chapter began, namely, whether and in what way *nous* might be separable (*chôristos*). It is sometimes maintained that DA III.4 argues for a strong form of separability, and that by the end of the chapter Aristotle has already established (to his own satisfaction) that *nous* is immaterial and separate from the body.[27] It is certainly true that, of the six predicates of interest identified in Section 9.2, the first three all occur in DA III.4, where he variously describes *nous* as:

> unaffected (*apathês*) at 429a15
> unmixed (*amigês*) at 429a18
> separate (*chôristos*) at 429b5

However, it is also true that none of the last three predicates occur in DA III.4. It is only in DA III.5 that we find mention of something

[25] DA III.8 432a3–10, trans. Shields.

[26] This passage should be read in conjunction with the (much-discussed) second half of *Posterior Analytics* II.19, where Aristotle emphasizes that the apprehension of universals and basic scientific principles is firmly rooted in perception.

[27] For a recent example, see Cohoe 2022 at pp. 237–240. Less recent is Brentano 1866/1977 at pp. 76–83, where he claims to find three proofs in this chapter of "the spiritual nature of the intellectual soul" (p. 76).

that is deathless (*athanatos*), separated (*chôristheis*), and everlasting (*aidion*). Unlike these last three predicates, which are fairly unequivocal, the three that occur in DA III.4 allow of more nuanced readings.

When Aristotle describes *nous* as separate, for example, what he says is perfectly compatible with *nous* being separate only in account—a possibility that he raises right at the beginning of the chapter and that he does not appear to have ruled out. When he says that *nous* is unmixed, the context makes clear that his principal claim is that *nous* has no bodily organ. It is a familiar thought from contemporary discussions of consciousness that there is no organ or "seat" of consciousness, which instead we should think of as an emergent property, but few who take this view think that they are arguing for dualism. Finally, Aristotle is clear at 429b29–30 that perception and *nous* are both unaffected, albeit in different ways. One way of taking the sense in which *nous* is unaffected would be that there is nothing comparable in the case of *nous* to the physical interactions that occur between sensible objects and the organs of sense—which would seem a reasonable conclusion to draw for someone who thinks that *nous* does not have a bodily organ.

It is far from obvious, then, that DA III.4 makes the strong claims that some have suggested. To focus the discussion, it will be helpful to distinguish inflationary and deflationary interpretations of *nous* and the objects of *nous*, as in Table 9.1. Relative to this classification, DA III.4 seems best read as adopting a deflationary account of the objects of *nous*. This should not be controversial. At the same time, DA III.4 seems at least consistent with a deflationary reading of *nous* in the following sense: nothing in DA III.4 compels us to think that, at least in that chapter, Aristotle has an inflationary reading of *nous* in mind.[28]

This means, then, that everything hangs on the short and cryptic DA III.5, to which we now turn.

[28] For a similar conclusion see section 4 of Miller 2012, which finds that Aristotle's various arguments cannot plausibly be taken to establish anything stronger than separability *kata logon*.

Table 9.1 Inflationary and deflationary interpretations of Aristotle's *nous*.

	Nous	Objects of *nous*
Inflationary	*Nous* is a distinct and separable part of the *psuchê* that can survive independently of the body.	The objects of *nous* are pure essences that can be apprehended through the intellect independently of the senses.
Deflationary	*Nous* is a capacity that is not connected to a particular bodily organ, but still depends upon the body and can neither operate nor survive without it	The objects of *nous* are essences, which are intellectual but grounded in perception, in the way that mathematical objects are (although they are arrived at differently).

9.4 Who or what is DA III.5 about?

Confirming the general principle that volume of commentary is directly proportional to obscurity of expression, the 160 or so words of DA III.5 have probably, over the centuries, elicited more discussion than the rest of the *De Anima* put together. Rather than begin by setting out the principal lines of interpretation, however, postponing introducing them for as long as possible will give us a better sense of the problems that those interpretations are trying to solve.[29]

It will be helpful to have the full text in front of us. I will number the sentences, indenting two sentences that Ross in his 1961 edition suggested do not really belong here.

(1) Since in all of nature (*phusei*) there is something which is the matter for each kind of thing (and this is what is all those

[29] For a diametrically opposed approach, see Shields's commentary at 312–329. Shields goes through the text of DA III.5 presenting each sentence from the perspective of both the human and the divine interpretations.

things in potentiality), while something else is their cause, i.e., the productive one, because of its producing them all as falls to a craft in relation to the matter, it is necessary that these differences be present in the *psuchê*.

(2) And there is one sort of *nous*, by coming to be all things, and another sort by producing them all, as a kind of positive state, like light.

(3) For in a certain way light makes colors which are in potentiality colors in actuality.

(4) And this *nous* is separate (*chôristos*) and unaffected and unmixed, being in its essence actuality: For what acts is always superior to what is affected, as too the first principle is to the matter.[30]

(4a) Knowledge in actuality is the same as the thing, though in an individual knowledge in potentiality is prior in time, though generally it is not prior in time.

(4b) But it is not the case that sometimes it reasons and sometimes it does not.

(5) And having been separated (*chôristheis*), this alone is just what it is, and this alone is deathless and everlasting, though we do not remember, because this is unaffected, whereas passive reason is perishable.

(6) And without this, nothing reasons.

To support the bracketing of both (4a) and (4b), Ross notes that (4a) reappears verbatim at the beginning of DA III.7, suggesting that it makes (marginally) more sense there, and, even more importantly, arguing that the two sentences together break the flow of the argument from (4) to (5).[31] Shields agrees in removing (4a), but retains (4b). The most recent edition, that of Valverde (following

[30] Shields translates (4) as two sentences. Ross 1961 has the Greek equivalent of a colon, while Valverde's edition has a period.

[31] See Ross 1961 at p. 44.

Siwek), restores both (4a) and (4b), as do Miller's English translation and Corcilius's German translation.[32] We will return to this textual matter in due course.

First, though, let us start with broad strokes of the brush, focusing on the first three sentences. It is hard to dispute the following:

- Aristotle introduces (in [2]) a distinction between two types of *nous*, or more cautiously, between two dimensions of *nous*. These are standardly termed active and passive, although Aristotle does not characterize them as such in so many words.
- This distinction emerges (in [1]) from his general account of change and coming-into-being (on which see Chapter 4 above), and the principle that all change requires both an active principle and something on which that active principle operates. In other words, there is nothing here that is specific to *nous*. He is working from his general model of explanation in the sublunary realm (*phusis*).
- The active dimension operates in some sense like light ([2] and [3]), by making what is potential actual.

At first sight, all three points are broadly speaking continuous with the preceding discussion in DA III.4. As we have seen, Aristotle explores at length how *nous* operates in and through perception to extract those essences or forms that are its objects. This is an active process. So, trivially, *nous* must be in some sense an agent. If *nous* is the agent, then it is clear that it needs something on which to act, and we do not have far to look to identify what that is. *Nous* operates on the deliverances of the senses. In the case of mathematical objects, it operates by abstraction. In the case of non-mathematical essences, it operates in a much more complicated way that Aristotle does not really describe, other than highly

[32] Valverde gives his reasoning in note 345 at p. 117 of his 2019 publication.

allusively with the complicated metaphor in the second half of *Posterior Analytics* II.19.

At first glance, then, the first three sentences (1) through (3) of DA III.5 do not seem to bring into play any ideas that are not already there in the previous chapter. Let's look at these sentences more closely. There is no need to linger over (1). As indicated above, Aristotle is here saying that *nous* is not an exception to the general principles governing the sublunary realm—and indeed the principles that he explicitly mentions were pretty clearly applied in DA III.4. So let's look more closely at (2):

> (2) And there is one sort of *nous*, by coming to be all things, and another sort by producing them all, as a kind of positive state, like light.

The first of the formulations that Aristotle uses directly echo formulations in the previous chapter. The mysterious-sounding comment in (2) that there is one sort of *nous* that comes to be all things seems to be echoing the comments made in response to the first puzzle at the end of DA III.4. How, Aristotle asks rhetorically there, if *nous* is simple and unaffected can it operate, since reasoning seems to be a form of being affected and requires some commonality between what acts and what it acts upon (illustrating also, by the way, that the idea that the operation of *nous* has an active and a passive dimension seems present in almost those very words before DA III.5 gets started)? His answer is standard Aristotelian doctrine. *Nous* is able to function because, before the act of *noêsis*, it is, potentially, that which it becomes in actuality in the act itself:

> Or else being affected in virtue of something common is as discussed earlier: that reason is in a certain way in potentiality the object of reason, though it is nothing in actuality before it

> reasons—in potentiality just as in a writing tablet, which is just what turns out in the case of *nous*.[33]

Here Aristotle applies an explanatory template that he has already developed in the context of perception. As mentioned earlier, and as he reiterates at the beginning of DA III.4, an act of perception is simultaneously the actuality of the sense and of the object of perception, and where there is an actuality there has to be a corresponding potentiality. The same model is applied to *nous*:

> It is necessary, therefore, that it be unaffected, yet capable of receiving the form; that it be of this sort potentially but not be this; and that it be such that just as the perceptual faculty is to the object of perception, so *nous* will be to the objects of thought.[34]

So far, then, nothing drastically new (relative to the previous chapter) has made an appearance in DA III.5. Let's look at the second part of sentence (2), where Aristotle says that here is another sort of *nous* "by producing them all, as a kind of positive state, like light." How, if at all, might this fit into the earlier discussion?

As we saw when discussing perception, Aristotle defines light as the actuality of the transparent, but what he is focusing on here is surely what light *does*, rather than what it is. In particular, light functions to make colors visible, as he states in sentence (3). It is only in virtue of light that the sense of sight can detect colors. Moreover, although Aristotelian colors are not perceiver-dependent in the way that most modern philosophers tend to think about secondary qualities, they still depend crucially upon light. Only in the presence of light can colors become visible. In other words, what light does is make it possible for colors to move from potentiality to actuality.

[33] DA III.4 429b29–430a2, trans. Shields
[34] DA III.4, 429a15–18, trans. Shields.

It is worth bearing in mind that Aristotle offers light as an analogy twice removed, as it were. The principal point that Aristotle is making in sentence (2) is that the second sort of *nous* is "a kind of positive state." The word that Shields translates as "positive state" is *hexis*, which in the *De Anima* appears in two contexts. It is used to characterize light in the discussion of perception.[35] But it is also applied more generally when Aristotle is explaining his distinctions between different levels of potentiality and actuality. Recall that Aristotle has a threefold classification, which he presents with two different terminologies, as laid out in Table 6.1 in Chapter 6, describing the different ways in which someone can be a potential/actual knower. Aristotle describes the transition from potentiality to first actuality (which is the transition from being cognitive able to acquire knowledge to possessing knowledge [but not using it]) as a transition from one *hexis* to another—from the *hexis* of being ignorant but capable of knowing to its contrary, the *hexis* of possessing knowledge but not actively using it.[36]

If, as seems reasonable, we take at face value Aristotle's statement that *nous*, in its active capacity, functions actively in the manner of a *hexis*, then he might be read to be making the entirely sensible point that *nous* cannot be exercised unless the basic tools are in place. We cannot think without concepts, for example, or without grasping basic logical principles and other *archai*. These are not given to us in the way that the direct objects of perception are given to us. We have to work to get them. In other words, we need to arrive at the *hexis* that will give us the capacity to engage in the characteristic activities of *nous*. If this is right, then the point that Aristotle is making in sentences (2) and (3) in DA III.5 is a generalization of his discussion of different ways of thinking about knowledge. And this would not be particularly surprising, since actively exercising

[35] E.g., in DA II.7 at 418b19.

[36] At 417131–417312 the transition is described as "being altered through learning, with frequent changes from a contrary state (*hexis*)" (trans. Shields).

the *hexis* arrived at by learning grammar or arithmetic is a paradigmatic exercise of *nous*. But this, again, is an idea that was already present in DA III.4. And it would seem to be entirely compatible with the deflationary reading of both *nous* and the objects of *nous*.

We have now gone as far as we can without bringing in the secondary literature on DA III.5. What has been proposed up to now would standardly be termed a version of what has become known as the *human interpretation* of DA III.5.[37] As its name suggests, this approach to the text sees the subject matter of DA III.5 as continuous with the rest of the *De Anima*. Aristotle is continuing his investigations of sublunary psychology by considering the distinctively human capacity of *nous*. It seems plausible that, if DA III.5 had ended at sentence (3), the human interpretation would be the only game in town. But, as it is, the chapter continues in a way that has seemed to many to require us to abandon the human interpretation of DA III.5 and adopt a completely different approach. The basic line of reasoning behind the *divine interpretation* is that Aristotle says things about *nous* that, if they are taken to apply to human *nous*, are flatly incompatible with the basic tenets of the *De Anima*. The only way of interpreting DA III.5 that preserves the integrity of the *De Anima* is to take Aristotle to be talking about divine *nous* rather than human *nous*.

The earliest known proponent of the divine interpretation is Alexander of Aphrodisias (writing around 200 BCE), who proposed it in a short essay now known as the *De Intellectu*, transmitted in the manuscript tradition as part of the second book of his treatise *De Anima*.[38] Alexander identifies three different types of *nous* in the *De Anima*. Two are human, and this is what he says of the third:

[37] The earliest proponent of the human interpretation was Theophrastus of Eresus, Aristotle's close collaborator and successor as head of the Academy. Its most distinguished proponent is undoubtedly Thomas Aquinas. Hicks and Ross are also proponents, as is Wedin 1988.

[38] This second book is a miscellany of more or less independent pieces collectively known as the *Mantissa* and translated by Sharples in Sharples 2004.

> It is the *nous* said to be "from without," the productive [*nous*], not being a part or parcel of our *psuchê*, but coming to be in us from outside, whenever we think of it, if indeed thought comes about in the apprehending of the form, and (if indeed) it is immaterial form, never being accompanied by matter nor being separated from matter when it is thought.[39]

Alexander is envisaging an immortal divine intellect that consists in pure forms thinking themselves—using language very similar in fact to Aristotle's description of divine *nous* in *Metaphysics* Lambda IX.

It is not easy to extract from the *De Intellectu* a clear argument for interpreting productive *nous* as, in effect, the unmoved mover (and Alexander's own *De Anima* commentary has sadly not survived). But if we look more broadly at Alexander's approach to the *De Anima* and his own account of the *psuchê*, one possible motivation becomes clear. In his own *De Anima*, Alexander offers a broadly naturalistic account of the *psuchê* that takes most seriously Aristotle's characterization of it as the form of the body. And from that characterization he explicitly draws the conclusion that the *psuchê* cannot exist separately from the body.[40] A *psuchê* that cannot exist apart from the body can plainly not be "deathless and everlasting," and so what is deathless and everlasting cannot be the human *nous*—in which case, it must be divine *nous*.

One commentator's *modus tollens* is another's *modus ponens*, however. For Aquinas and other Latin medieval interpreters (and no doubt many modern ones), reading DA III.5 as an account of human *nous* is attractive precisely because it seems to yield an Aristotelian endorsement of the immortality of the soul.

[39] Alexander *De Intellectua* 108, 22–26, trans. Sharples.

[40] See, for example, the lengthy discussion at pp. 17–19 of his *De Anima* (pp. 44–46 in Caston 2012a).

What this means is that there is a sense in which paradigmatic examples of both human and divine interpretations are defined relative to what was earlier termed an inflationary reading of human *nous*. The human interpretation embraces the inflationary reading, while the divine interpretation is often put forward as an alternative to the inflationary reading. Things are not *quite* as clearcut as this suggests. There is certainly room for a proponent of the divine interpretation to hold both that DA III.5 is discussing divine *nous* and that DA III.4 establishes an inflationary conception of human *nous*. However, as indicated above, DA III.4 in no sense *requires* an inflationary conception and can be comfortably read without one.

If we look at the text of DA III.5, support for the inflationary view comes solely from (4) and (5), which we should look at closely.

(4) And this *nous* is separate (*chôristos*) and unaffected and unmixed, being in its essence actuality: For what acts is always superior to what is affected, as too the first principle is to the matter.

. . . [corresponding to the sentences Ross proposes for bracketing]

(5) And having been separated (*chôristheis*), this alone is just what it is, and this alone is deathless and everlasting, though we do not remember, because this is unaffected, whereas passive reason is perishable.

(6) And without this, nothing reasons.

The first point to make is that (4) and (5) each attribute very different predicates to active *nous* (or: to *nous* in its active dimension). The predicates in (4) are "separate (*chôristos*)," "unaffected," and "unmixed," while those in (5) are "separated (*chôristheis*)," "deathless," and "everlasting."

The predicates in (4) all made an earlier appearance in DA III.4. It was suggested above that all of these predicates are consistent with a deflationary reading of human *nous*. Aristotle has not, either in DA III.4 or in the first three sentences of DA III.5, established

that *nous* is *chôristos* in the sense of "being capable of independent existence." Everything he says is arguably compatible with *nous* being separate only definitionally (*kata logon*).[41] The claim that human *nous* is unmixed can be read as asserting no more than that *nous* does not have a bodily organ, and someone who believes that *nous* does not have a bodily organ would naturally say that *nous* is unaffected. It is worth remembering that Alexander of Aphrodisias emphatically maintains both that the *psuchê* cannot exist apart from the body whose *psuchê* it is and that it is non-bodily/incorporeal (*asômatos*).[42] As Alexander points out, the non-bodily nature of the *psuchê* follows immediately from its status as a form. Being non-bodily does not entail being capable of existing without a body.

The real weight of the case for the inflationary reading comes from (5). It would seem to be an uphill struggle of Sisyphean proportions to give a deflationary reading of "deathless and everlasting."[43] If Aristotle is saying that the human *nous* is deathless and everlasting, then it would seem that we have to read him as making the case for some form of personal immortality. By the same token, if we want to avoid a reading of personal immortality, then we have to take him here to be talking about divine *nous*. However, there may be a way to have the best of both worlds that has not, to my knowledge, been widely canvassed in the literature.[44] The following is offered as a speculative suggestion to stimulate discussion.

One of the advantages of Ross's suggestion of bracketing (4a) and (4b) is that it allows us to juxtapose sentences (4) and (5) so that they can be read as part of a single and continuous train of reasoning. Ross interprets this train of thought in the way that almost all other commentators do. Whereas sentence (4) has a clear

[41] Compare Miller 2012.

[42] See the discussion in his *De Anima* cited in note 35 above.

[43] Although it has been tried. The most plausible attempt comes from Michael Wedin, who proposes that "we relativize ascription of divine properties, counting them as indicators of the most divine thing in us, not of anything absolutely divine" (1988, p. 192).

[44] It is hinted at in Hicks at pp. 505–506.

grammatical subject (*houtos ho nous*, referring back to the active dimension of *nous* just discussed), sentence (5) does not. It begins with a participle (*chôristheis*, in the nominative) without a clear indication of what the participle is characterizing. Ross has no doubts, however: "The unnamed subject of the present sentence is plainly the active reason."[45] This leads him to a temporal interpretation of (4) and (5). Whereas (4) is discussing the operation of active *nous* in ordinary, embodied, human existence, (5) describes what happens when active *nous* is, as it were, freed from the shackles of the body. This is how Ross reconstructs Aristotle's reasoning in (5) and (6):

> Then we get the sense: 'and this alone (the active reason) is immortal and eternal (we do not, however, after death remember our life on earth, because the active reason is unaffected by events, while the passive reason, which *is* affected by them, is perishable); and without the active reason nothing thinks.'[46]

Ross is interpreting the aorist passive participle *chôristheis* as meaning something like "after it has been separated."

This is a perfectly legitimate reading of *chôristheis*, but it is not mandatory.[47] An alternative is proposed by Caston, who offers "when it occurs separately." He proposes this translation as part of his case for a version of the divine interpretation. Caston, in effect, works backward from this interpretation of *chôristheis* to argue that

[45] Ross 1961, p. 47.
[46] Ross 1961, p. 48.
[47] The aorist in Greek marks aspect as well as tense. When it marks tense, it indicates the time of an action or state—typically that it took place in the past. For that reason the aorist is often used in narrative. In contrast, when it marks aspect, the aorist is characterizing the quality of an action or state. One such use is ingressive, when the aorist describes the entrance into a state or the beginning of an action (S1924). This is what Ross is proposing. But the aorist also has a complexive (or momentary or concentrative) use, when, in Smyth's phrase, "it concentrates the entire course of an action to a single point" (S1927), regarding it as a single fact, irrespective of beginning (if any) or duration. The two non-ingressive suggestions canvassed below both take *chôristheis* as an instance of the complexive aorist.

throughout DA III.5 Aristotle is equating *nous* in its active dimension with the unmoved mover. As he memorably puts it:

> Had those brief 15 lines constituting chapter 5 dropped out of the tradition, I do not believe we would have missed anything significant as regards the psychological mechanisms of thought. But we would have missed something of great importance to Aristotle: namely, how mind fits into the world and where it tends, and above all, how we, like the heavenly spheres, are moved in all we do through our imperfect imitation of God.[48]

Both Ross and Caston take the relation between sentence (4) and sentence (5) to be ampliative. That is to say, they both take sentence (5) to offer a further characterization of the very thing that is discussed in (4). For Ross, sentence (4) introduces active *nous* in its human embodiment while (5) strips away the corporeal to reveal it in its immortal essence. For Caston, sentence (5) makes clear that sentence (4) was, somewhat cryptically, talking about divine *nous* all along.

There is room, however, to read the relation between these two sentences to be adversative or contrastive, rather than ampliative. As Hicks discusses, *chôristheis* has been translated (e.g., by Zabarella) as "separated by abstraction." Another choice of words might be "considered as existing separately." The idea here is that, to the extent that there is a separation, it is a separation in thought (*kata logon*). When we try to make sense of the active dimension of *nous* independently of its operation in a living and knowing human organism, then we can only look toward the divine. In DA III.4 and the first part of DA III.5, Aristotle explains how human *nous* functions in the context of human life and human cognition—how it has both a passive and an active dimension. But if we want to understand what that active dimension is in itself, separately from

[48] Caston 1999, p. 224.

how it operates to generate objects of thought for sublunary beings, then we can only do so by analogy with the divine.

If we adopt this reading, then we might paraphrase the gist of sentences (4) and (5) along the following lines:

> And this *nous* (the *nous* that has been discussed in the previous chapter, the sublunary *nous* that generates the objects of thought from the deliverances of the senses) is, as was indicated earlier, separate (*chôristos*) and unmixed and unaffected . . . **But**, when we consider it separated by abstraction, as it exists and operates in the prime mover, it is deathless and everlasting, and so on.[49]

This way of looking at sentences (4) and (5) allows us to preserve key elements of the two interpretative traditions without having to choose one exclusively. We can maintain, with the human interpretation, that most of DA III.5 continues the argument of DA III.4 and that when Aristotle discusses the active dimension of *nous* he is discussing the activities required to generate objects of thought from the deliverances of the senses. At the same time, we can acknowledge with the divine interpretation that what is deathless and everlasting is divine *nous* and that, as Aristotle emphasizes elsewhere (e.g., the final chapter of the *Nicomachean Ethics*), human *nous* aspires to the condition of divine *nous*.

Unfortunately, this interpretation runs directly into one of the textual challenges that is frequently raised against the divine interpretation. If what is eternal and everlasting is divine *nous*, then what are we to make of the second half of sentence (5). How can we make sense of Aristotle's apparent claim that "we do not remember,

[49] A linguistic point. The proposal here is to take the postpositive *de* in sentence (5) as a balancing adversative ("on the other hand' or "alternatively"), as if it was responding to a *men* in sentence (4). Denniston observes that such a use of adversative *de* without preparatory *men* is not infrequent in prose. See Denniston 1950 at pp. 165–167, where he cites several passages from Aristotle, among other authors. As this passage is standardly construed and translated, the *de* is understood as copulative ("and"), which, it must be admitted, is an overwhelmingly more common usage.

because this is unaffected, whereas passive reason is perishable." What is it that we do not remember? And what exactly is the contrast drawn with perishable, passive reason? Ross has a ready answer: it is the immortal soul that fails to remember its embodied life. But that answer is obviously not available to anyone who thinks that sentence (5) is discussing divine *nous*.

There are a couple of possible strategies here. One has been canvassed by Caston, who ingeniously proposed completely reconceiving the second half of sentence (5). As it standardly appears in modern editions, and as it is translated by Shields, there is a comma after "remember," which invites, indeed requires, that the conjunction *hoti*, which immediately follows, be read as "because." There was no punctuation in ancient Greek until many centuries after Aristotle wrote, and so Caston proposes that we remove the comma. Since *hoti* can also mean "that," the unpunctuated second part of the sentence could then be translated as: ". . . though we do not remember that this is unaffected, whereas passive reason is perishable." This neatly avoids the problem, because active *nous* is now the object of the remembering, rather than its agent. Still, as Burnyeat has observed, it is hard to believe that card-carrying Aristotelians would *forget* that what is deathless is not perishable.[50]

A second possible strategy, not yet explored in the literature, would be to look in more detail at the word translated as "to remember." This is *mnêmoneuein*, which is one of several words that Aristotle uses to discuss memory. Aristotle has little to say about memory in the *De Anima*, but there is a subtle discussion in the *De Memoria*. Aristotle there makes a very clear distinction between two types of cognitive state directed toward the past. These are typically translated as "memory," on the one hand, and "recollection" or "recall," on the other. *Mnêmoneuein* is one of the verbs used to characterize the first kind of state, while Aristotle typically uses

[50] Burnyeat 2008 at pp. 53–54.

anamimnêskesthai and its cognates when he wants to talk about recollection. There are two very interesting features of Aristotle's discussion of memory in *De Memoria* I. The first is that it is a much more primitive state than recollection. It is not at all restricted to humans, but shared with all animals who perceive time. The second is that memory for Aristotle is, as Julia Annas has brought out, first-personal.[51] Annas makes a convincing case that Aristotle's memory corresponds to what we would now call episodic or experiential memory—memories of specific events that one has lived through in the past. What is recollected, in contrast, are facts or items of knowledge (that the square of the hypotenuse equals the sum of the squares of the other two sides, for example).

This is potentially relevant to the problematic claim in sentence (5) because Aristotle does not actually say what it is that we do not remember. Ross and those who interpret DA III.5 in like manner assume that what Aristotle is saying is that we, when released from the shackles of the body and enjoying the fruits of immortality, do not remember the mortal coil. This is an awful lot to read into the words as written. Even more importantly, it may not even be coherent. If things are as Ross and others think they are, then there is no "I" or "we" that survives death. The active intellect has to be completely impersonal, because everything characteristic of the particularity of individual experience is (on this interpretation) tied to the perishable and embodied passive intellect. And that means that it is a sort of category mistake to apply to it the concept of memory.

Another, and arguably better, option would be to take the object of "we do not remember" (*ou mnêmoneuomen*) to be the subject of sentence (5), namely, divine *nous*. The point of the excursion into what Aristotle means by "memory" is that it gives us a way of understanding what it might mean to say that we do not "remember" divine *nous*. If we understand *mnêmoneuein* in the way that Aristotle

[51] Annas 1992.

understands it in the *De Memoria*, then we might gloss "we do not remember" as "we have not had experience of" or "we have no trace of." What Aristotle is saying is not that active *nous* cannot remember its mortal past, but rather that we, as mortal beings, cannot have any direct, first-person experience of divine *nous*.

Admittedly, each of the two strategies just considered involves more creative interpretation here than would ideally be desirable. But there is no way of interpreting DA III.5 that does not involve some considerable degree of awkwardness. Supporters of the divine interpretation have to explain why Aristotle would suddenly change the subject at the beginning of DA III.5 and start talking about divine *nous* without explanation, or even saying that that is what he is doing. Supporters of the human interpretation, on the other hand, have to explain why Aristotle would suddenly, and without argument or explanation, adopt a belief in personal immortality that not only has no basis in the rest of the *De Anima*, but seems flatly inconsistent with the main line of argument. Some strain in accommodating "we do not remember" may be a price worth paying to avoid either of these interpretive contortions.

* * *

To summarize the discussion, Aristotle's notion of *nous* is plainly complex and multi-faceted, with no obvious equivalent in English. One way of thinking through the exegetical issues raised by DA III.4 and DA III.5 is in terms of a contrast between deflationary and inflationary readings of both the capacity and its objects. On a deflationary reading, *nous* is a capacity that, while not connected to a particular bodily organ, still depends upon the body and can neither operate nor survive without it. Its objects are essences, which are intellectual, but grounded in perception. On an inflationary reading, *nous* is a distinct and separable part of the *psuchê* that can survive independently of the body, while its objects are pure essences that can be apprehended through the intellect independently of the senses.

The discussion of *nous* and perception in DA III.4 is arguably consistent with the deflationary reading of the capacity, and seems to require a deflationary reading of *nous*'s objects. The short and enigmatic DA III.5, however, is often taken to require an inflationary reading, committing Aristotle to a theory of personal immortality that has seemed to many not to sit well with the general tenor of the *De Anima*. One alternative developed in the literature is to take DA III.5 to be discussing not human *nous*, but divine *nous*. The discussion above proposed a way of steering between these two alternatives, suggesting that Aristotle may be discussing human *nous* in a deflationary manner in the first part of DA III.5, before contrasting it with divine *nous* in the latter part of the chapter.

Further reading

The overwhelming majority of the secondary literature on *nous* in DA III has focused on DA III.5 and the so-called active intellect. Brentano 1866/1977 is often cited respectfully, but may not live up to expectations. Two helpful more modern discussions are Caston 1999 and Burnyeat 2008, both proposing forms of the divine interpretation. They can usefully be read in conjunction with Alexander of Aphrodisias's *De Intellectu*, which is translated in Sharples 2004. Miller 2012 is a careful discussion of different senses of "separable" that is a useful antidote to some of the more breathless interpretations of DA III.4 and DA III.5. It also is a good guide to the literature up to that date. For a more recent review see Cohoe 2022.

On Aristotle's conception of *nous* more generally, Wedin 1988 offers a resolutely naturalistic approach that clearly situates it relative to Aristotle's discussion of imagination. Kahn 1992 travels interestingly in the opposite direction. Sisko 1999 explores the relation between *nous* and perception in the opening part of DA III.4, on which see also Shields 1995, Caston 1998, and Menn 2020.

10

The springs of action

Focus texts
DA III.6, 9–11
De Motu Animalium 6–7
Nicomachean Ethics VI.1–9
Nicomachean Ethics VII.1–3

The discussion in the second half of DA III lacks the clear flow of the earlier two books and the first part of this one. There is a fairly unified treatment of animal locomotion in Chapters 9–11, but several of the other chapters have a somewhat discontinuous and fragmented feel, most particularly 7 and 8, but also 12 and 13. Moreover, as noted at the beginning of Chapter 8, there is a certain awkwardness in the overall structure of Book III, because after the discussion of *nous* Aristotle reverts to a more general discussion of animal motion, shifting from a capacity that is uniquely human to one that is common to all the non-sessile animals. This means, among other things, that his treatment of *phantasia* is distributed between III.3 and III.9–11. Aristotle's stated motivation seems to be endoxic: he is following those who have assigned two differentia to the *psuchê*: motion with respect to place, on the one hand, and judgment (broadly construed, to include perception), on the other. The discussion of judgment continues through the end of III.8, with locomotion beginning at III.9.

But of course, these two differentia are very closely connected, and it is impossible to make a clean separation between them. This may explain why Aristotle seems to backtrack in the final couple of chapters. In III.12 and III.13, for example, he returns to discussing

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the individual senses, particularly emphasizing the importance of touch—why, given that the individual senses were all analyzed in Book II? Perhaps the best explanation is that he now has a new focus. Whereas in Book II he was interested in the purely epistemic dimension of sense perception, he is now interested in the practical side of perception: how it contributes to living (in the case of touch, which is how pleasure and pain are discriminated) and living well (in the case of the other senses).

Discontinuities notwithstanding, it is possible to identify a coherent and extended line of thought in the second half of DA III (although that is not all that is going on there). Here is one way of mapping these chapters.

III.6
Broadens out the discussion of *nous* by introducing a fundamental distinction between what might be termed intellectual apprehension, on the one hand, and propositional thought and reasoning, on the other.

III.7
Starts the transition from the epistemic to the practical, by drawing attention to the motivating effects of *nous* and perception.

III.8
Reiterates the parallels between *nous* and perception first drawn at the start of III.4 by way of summarizing the discussion of the "cognitive" dimension of judgment.

III.9–11
Discuss the "springs of action" in human and non-human animals, focusing on the roles of *nous*, desire, perception, and *phantasia*.

III.12–13
Explore the practical functions of perception and the individual senses.

This is perhaps the part of the *De Anima* that most needs to be contextualized with Aristotle's writings elsewhere. When we look at the three chapters (III.6–8) that continue the discussion of *nous* and explore how it connects to the discussion of action, it is clear that Aristotle is working with a range of different intellectual activities, but he does not explicitly distinguish them. Here we can get guidance from the treatment of the intellectual virtues in the opening nine chapters of *Nicomachean Ethics* Book VI. Much of the focus of the discussion of animal locomotion in III.9–11 is on the complex similarities and dissimilarities between the generation of action in human and non-human animals. But the discussion is highly condensed, and it is helpfully considered in the context of two closely related discussions elsewhere in the corpus: chapters 6 and 7 of the *De Motu Animalium*, which Aristotle seems to present as a development of the basic picture sketched out in our text, and the lengthier discussion of the practical syllogism in *Nicomachean Ethics* VII.1–3 (where Aristotle is discussing *akrasia*, weakness of will). All three are focus texts for this chapter.

This chapter begins in Section 10.1 by looking at DA III 6–8, which bridges between the discussions of *nous* and animal motion. Section 10.2 focuses on desire, while Section 10.3 explores the role of thought in generating action.

10.1 Bridging from the epistemic to the practical: DA III.6–8

There are three transitional chapters between the sustained discussion of *nous* in DA III.4–5 (discussed in Chapter 9 above) and the transition from judgment to action that Aristotle makes at the

beginning of DA III.9. As indicated earlier, these chapters lack a clear argumentative thread and have a rather fragmentary feel, interspersing new topics with summary. This section focuses on those aspects of the chapters that help us to see how Aristotle makes the important transition from his *epistemic* focus on perception and *nous* to more *practical* matters of action and locomotion.

In Section 9.1, we saw that Aristotle talks about *nous* both narrowly and broadly. In the broad sense, *nous* is Aristotle's term for the complex of intellectual abilities that (in his eyes) separate human beings from other animals. Considered more narrowly, *nous* is a specific one of those abilities, tied to acts of intellectual apprehension. Many of the specific claims that Aristotle makes in DA III.4–5 make most sense in the context of the narrower understanding of *nous*. So, for example, Aristotle holds some form of identity theory for both *nous* and perception (as he emphatically reiterates in III.8)—the object of *nous* is (in some sense) the same as the actualization of *nous* in an act of thinking, just as the object of perception (a special sensible) is (in some sense) the same as the actualization of the corresponding sense modality in an act of perception. As observed in Section 9.3, perhaps the most plausible way of reading this is to take the objects of *nous* to be essences and for the activity of *nous* to be the intellectual apprehension of essences. If this is right, then it immediately raises the following question. How does the (narrowly construed) apprehension of essences relate to the other forms of intellectual activity that fall under the scope of *nous* broadly construed?

There are some valuable clues in DA III.6, although this chapter is couched in terms that are not immediately perspicuous. Aristotle starts the chapter, which immediately follows the heady discussion of active *nous* in DA III.5, with the following statement: "Reasoning (*noêsis*) of indivisible things is among the things concerning which there is no falsity, while among those where there is both falsity and truth there is already some combining of thoughts, as a unity from them."[1] This is

[1] DA III.6 430a26–28, trans. Shields.

most easily read as a form of the familiar distinction between concepts and judgments. If we think of the "indivisible things" as concepts and we think of the *noêsis* of concepts as the intellectual apprehension of the essence of what falls under the concept (so that the *noêsis* of the concept *human being* is the intellectual apprehension of the essence of human beings), then there is a clear continuity with the preceding discussion. And at the same time, Aristotle is broadening the terms of the discussion. The apprehension of essences does not admit of truth or falsity (any more than does the perception of white, or sweetness, or any other special sensible). Only judgments, which involve combining concepts, are truth-apt.

There is an obvious disanalogy, however, between apprehending concepts and perceiving special sensibles. It is plausible that special sensibles are in some sense simple and atomic. There is (arguably) no complexity in a sensation of blueness, or a taste of acidity. In contemporary parlance, qualia are ineffable and unanalyzable. The same cannot be said of concepts, however. There is a clear structure in concepts. If human beings are in essence rational bipeds, then the concept *human being* does have a structure—it is made up of two simpler concepts, *rational* and *bipedal*. So, in what sense can it be described as an "indivisible thing"? And one might reasonably wonder if it is really true that notions of truth or falsity do not apply. Surely one can be mistaken about what the essence of a particular thing is.

Aristotle seems to address the first of these points in the following passage, although the terminology is a little obscure:

> Since the undivided is spoken of in two ways, either in potentiality or in actuality, nothing precludes one's thinking what is undivided when one thinks of a length (for this is undivided in actuality, or thinking in an undivided time, since time is divided and undivided in a manner similar to a length).[2]

[2] DA III.6 430b6–10, trans. Shields.

Aristotle is exploiting the fact that the Greek word *adiairetos* is a verbal adjective, which can function either as a perfect passive participle to give the sense of a process that has been completed (e.g., something that *has been* divided) or to express possibility (e.g., something that *can be* divided).[3] This linguistic point sits nicely with Aristotle's actuality/potentiality distinction, and combining them gives him the tools to say that a line is both divisible and undivided. The line is divisible in the sense that it can *potentially* be divided into parts—any line can be sliced indefinitely many times. But, until such time as the division is made, the line is in *actuality* undivided. The same holds for concepts. If we consider the concept *bipedal* as part of the definition of the essence of human being, then we take it to be undivided. It remains divisible, however, because we can analyze it further (something is bipedal if and only if it walks with two legs).[4]

Intellectual apprehension, therefore, is of concepts that are undivided, but not necessarily indivisible. Aristotle opens and closes III.6 by affirming that this type of apprehension does not, strictly speaking, admit falsity. Here is how we ends the chapter:

> It is also the case that every assertion, just as every denial, says one thing of another and is true or false. But not every instance of reason (*nous*) does; rather reason (*nous*) directed to what something is with regard to its essence is true, and does not say one thing of another. Rather just as the seeing of an exclusive object is true, while whether the white thing is a man or not is not always true, so things are with respect to whatever is without matter.[5]

[3] See Smyth 1956, at §§358 and 472.

[4] For more details see Shields's helpful discussion at pp. 330–338. Shields makes the important point that being (un)divided is relative to context and explanatory purpose. From the perspective of linguistics, to take his example, a phoneme is undivided (as a primitive explanatory concept), but that same phoneme has a complex structure considered from the viewpoint, say, of acoustics.

[5] DA III.6 430b26–30.

The preceding discussion, however, suggests that the parallel between perception and intellectual apprehension may not be quite as neat as Aristotle suggests here. We can contemplate a concept (consider an essence) *qua* undivided. That is what we do when, for example, the concept features in some sort of propositional thought (e.g., when we think that human beings are both the noblest and the basest of animals), and Aristotle is surely correct that only the proposition as a whole is truth-apt, not the concepts from which it is composed. However, he should probably not be read as saying that we have some sort of infallible capacity to intuit essences. When those concepts that are divisible (e.g., the concept *human being*) are actually divided through some process of analysis, then they can be assessed in a reasonably familiar sense for truth or falsity. We can ask, for example, whether it really is the case that human beings are rational bipeds. Aristotle is more charitably interpreted as saying, surely correctly, that while every truth-apt propositional thought (or corresponding linguistic assertion) is made up of concepts (or word meanings) that *in this context* are neither true nor false, those thought-constituents (or word meanings) can nonetheless be assessed for truth or falsity in a different context, unless they are in some sense purely simple or/and indivisible.

In any event, DA III.6 makes the important distinction, within the general category of *nous* broadly construed, between propositional thought, on the one hand, and sub-propositional intellectual apprehension, on the other. Nowhere in the *De Anima*, however, does Aristotle distinguish different types of propositional thought, which leaves the discussion of *nous* somewhat undetermined. Turning to the classification of the intellectual virtues (and corresponding intellectual capacities) in Book VI of the *Nicomachean Ethics* will help both to give a more comprehensive map of *nous*, while also helping understand the transition to motion and action.

Aristotle's classification of the intellectual virtues in NE VI begins with a basic distinction between two different types of

object—things that are not capable of being otherwise, on the one hand, and things that can be otherwise, on the other. The things that cannot be otherwise are the domain of Aristotelian science and metaphysics, which fall under the general category of knowledge (*epistêmê*). And, as Aristotle explains in the *Posterior Analytics*, the acquisition of knowledge proceeds by deduction from first principles (*archai*). These first principles are grasped by *nous* in the narrow sense.[6] The things that are capable of being otherwise include two different types of object. First, there is what is to be made. This is the domain of art (*technê*). Second, there is what is to be done. This takes us into the realm of deliberation (*to bouleuesthai*) and practical wisdom (*phronêsis*). Aristotle's definitions of both art and practical wisdom help to flesh out the characterization of propositional thought as capable of being true or false. Each of them is characterized in terms of a "true course of reasoning" (*meta logou alêthous*).[7]

With this classification in mind we can see that the transition to motion and action in DA III.9, rather than making a completely clean break with the discussion of *nous*, is actually continuing that discussion, to the extent that it elucidates the practical dimension of *nous* and how it leads to action. At the same time, though, Aristotle needs to broaden the terms of the discussion, because his topic is animal motion in general and so the practical dimension of *nous* can only be part of the picture. One of the most interesting features

[6] In the much discussed and somewhat inscrutable *Posterior Analytics* II.19, Aristotle suggests that first principles are in some sense derived by perception-based induction. It's worth noting that this is entirely consistent with the discussion in DA III.6 about how the objects of *nous* narrowly construed can be both undivided (when considered as first principles of Aristotelian science) and divisible (when considered as the results of inductive reasoning). For more on this see Bronstein 2012 and Barnes's translation and commentary on the *Posterior Analytics* (Barnes 1993).

[7] NE VI 1040a20–21, trans. Ross/Urmson in ROT. They translate the second passage (1040b20–21) slightly differently because they follow Bywater in reading *alêthê* (which would agree with *hexin*, the capacity) where some manuscripts read *alêthous* (which would agree with *logou*). The second reading, followed here, has the virtue of making the formulations exactly parallel, so that the two types of reasoning are of the same species, with the respective domains of application serving as the differentia.

of DA III.9–11 is how Aristotle strives for a unified account of animal motion and the springs of action, applicable to both human and non-human animals.

It is important to recognize that Aristotle has what might strike the modern eye as a rather expansive conception of animal psychology.[8] He contrasts strikingly with Descartes, for example, who was adamant that non-humans animals were mere machines moved by instinct and reflex, thus foreshadowing (at least for non-human animals) the behaviorism of early twentieth-century psychology, since only humans possess minds and without minds there can be no psychology. Aristotle certainly thinks that only humans have *nous*, properly speaking, but he develops (in the *De Anima* and elsewhere) a rich psychology of action on which perception and *phantasia* can play structurally similar roles to *nous*. Interestingly, this allows him not only to allow that non-human animals are capable of forms of intentional action, but also to maintain that significant parts of human action come about in ways more similar to animal action than to the intellectual virtues discussed in *Nicomachean Ethics* VI.

Aristotle prepares the ground for his more systematic treatment of action in DA III.9–11 with some tantalizing but elusive comments about the motivational powers of both perception and *nous* in DA III.7. The earlier discussion of perception in Book II placed more weight on the workings of the individual senses and how they detect their respective special sensibles than on how perception represents the environment. This imbalance is somewhat redressed in the opening chapters on Book III, but it is not until DA III.7 that Aristotle turns to what might be termed the affective dimension of perception and its broader role in the psychological economy. The following passage opens the discussion:

[8] As argued in, for example, the first section of Sorabji 1992.

> Perception is similar, then, to bare assertion and to thinking. But whenever there is something pleasant or painful, it by, so to speak, affirming or denying, pursues or avoids. And it is the case that being pleased and being pained are the actualization of the perceptual faculty in relation to what is good or bad insofar as they are such.[9]

Aristotle's point is that the function of perception is not simply to represent the world. It is intrinsically evaluative, something that he elucidates through the comparison with assertion (and, by extension, thinking). Every (assertoric) sentence in Aristotle's logic is either an affirmation or a denial.[10] Perception functions somewhat similarly. In the cases that Aristotle is interested in, perception has affective responses built into it.

Aristotle is making a strikingly bold claim here. He is not just saying that perception is *valenced*—that we perceive things to be pleasant or unpleasant. Rather, he is directly tying perception to action. Something is directly perceived as *to-be-avoided*, or as *to-be-pursued*, in a way that is intrinsically motivating. Importantly, Aristotle describes this form of motivated perception as the actualization of perception. This is probably best read teleologically, as a statement about the overarching function of perception. When it is functioning optimally, the job of perception is not simply to represent the environment, but rather to represent what the psychologist J. J. Gibson termed the *affordances* of the environment: "the affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill."[11]

[9] DA III.7 431a8–11, trans. Shields.

[10] This is an important respect in which Aristotelian logic differs from modern logic, where negation is understood as the affirmation of a negated proposition rather than as a form of denial, and where sentences can be entertained without being affirmed (as, e.g., in the antecedent of a conditional). Stoic logic seems to have been closer to modern logic in these respects.

[11] Gibson 1979, 117.

This idea that perception has to be understood, not as a neutral way of picking up information about the environment, but as a way of engaging with the environment, is one way of making sense of a sentence that commentators have struggled with. Immediately after the passage just discussed he continues: "And avoidance and desire are the same, in respect of their actuality; and the capacity for desire and capacity for avoidance do not differ either from one another or from the perceptual faculty, although they do differ in being."[12] What can it mean to say that avoidance, desire, and perception are one thing, differing only in form or essence? Ross's suggestion that desire of one thing is simultaneously avoidance of its opposite does not seem to be true. I am perfectly capable of desiring opposites, even when I can't choose them both, and while it is true, as Ross also observes, that desire and avoidance both belong to animals and not to plants, this seems too lame for Aristotle to feel the need to point out.[13] In contrast, it does seem to be true that we can think of an animal's active engagement with the environment as a single phenomenon, of which desire, avoidance, and perception are closely linked (but obviously distinguishable) dimensions.

It is not simply that we cannot fully understand perception without understanding how it directly triggers behaviors of pursuit and avoidance. It is also the case that we cannot fully understand intentional behavior (of which avoidance and pursuit are the simplest forms) without understanding the role of perception. This is a theme that will be developed in much more detail in DA III.9–11, but Aristotle provides three tasters in DA III.7, both pointing to the role of images in rational thought and deliberation. First, he observes that rational *motivation* necessarily has an imagistic component: "Images belong to the rational *psuchê* in the manner of perceptions, and whenever it affirms or denies that something is good or bad, it pursues or avoids. Consequently, the *psuchê* never

[12] DA III.7 431a12–14, trans. Shields.
[13] See Ross 1961, p. 304, and the amusing discussion at Shields pp. 336–338.

thinks without an image."[14] Second, he notes that certain types of planning and problem-solving exploit perceptions and perceptual memories. "Sometimes, on the basis of images or thoughts in the *psuchê*, just as if seeing them, one calculates and plans future things with reference to things which are present."[15] An example might be working out how to get a large piece of furniture through a doorway—a problem that is typically solved by manipulating mental images (e.g., imagining the door in front of one with a mattress on its side passing through it). And third, he points out that practical reasoning needs to be anchored in perception in order to result in action: "And whenever one says *there is the sweet* or *the painful*, in that case one avoids or pursues, and in general will do some one thing."[16] All of these points will be picked up and amplified in DA III.9–11, to which we now turn, passing over DA III.8, which, while providing useful summary and recapitulation of matters discussed earlier, adds little new material.

10.2 The role of desire

After some interesting but inconclusive discussion about whether and how it might be appropriate to think of the *psuchê* as divided into parts, Aristotle turns in DA III.9 to his main question: What is responsible for animal locomotion? 'Locomotion' is to be understood as its etymology suggests. Aristotle's interest is in motion with respect to place (*kinêsis kata topon*), excluding the movements of plants that grow, for example. Moreover, the real focus of his attention is purposive movement (what in humans we would term "intentional action").

[14] DA III.7 431a14–17, trans. Shields.
[15] DA III.7 431b6–8.
[16] DA III.7 431b8–10.

The question motivating the discussion is: "what imparts the motion involved in an animal's going anywhere" (432b13–14). This is indeed the question that Aristotle answers in DA III.9–11 as a whole, but the details of the argument in DA III.9 suggest that in this initial part of the discussion he is actually considering a subtly different and narrower question, namely: Is there any single faculty of the *psuchê* such that the activation of that faculty alone would be sufficient to impart motion to an animal? After answering *that* question in the negative in DA III.9, he returns to the more general question at the beginning of DA III.10.[17]

The argumentation in DA III.9 is reasonably straightforward. Aristotle runs through the faculties discussed earlier in the *De Anima* and argues that none of them is individually sufficient for initiating action. Here is a brief summary, with little commentary

- *The nutritive faculty* cannot on its own initiate motion because, while plants possess it (and no other faculty), they are not capable of avoidance and desire, which Aristotle takes to be essential to purposive movement.
- *Perception* alone cannot be sufficient for action because there exist non-sessile animals that perceive their environment but do not move.[18]
- Neither *nous* (narrowly construed) nor the reasoning faculty (*to logistikon*) can be sufficient for action because (a) *nous* does not contemplate practical matters; (b) judgments that something is φ do not necessarily lead to the corresponding

[17] Distinguishing these two questions allows us to see (*contra* Shields at p. 356) that Aristotle is not contradicting himself when he says at 433a6–7 that desire (*orexis*) is not "in charge of" (*kuria*) this motion and then at 433a20 that there is one thing, the faculty of desire (*to orektikon*), that initiates movement. DA III.9 establishes that simply having a desire is not sufficient to initiate movement, but nonetheless, according to the argument of DA III.10, desire does have a privileged role in the causal antecedents of animal motion.

[18] Note that this argument would be a gross non-sequitur if Aristotle was not considering the narrower question identified above.

intention (or command); and (c) even when reasoning does issue in an intention, phenomena such as *akrasia* (weakness of will) show that intention does not necessarily lead to action.
- Nor is the presence of *desire* sufficient for action, because agents who are self-controlled can resist their desires and impulses.

The upshot of DA III.9, although Aristotle does not draw the conclusion explicitly, is that initiating action cannot be the sole province of any of the individual faculties. There has to be a division of labor.

The beginning of DA III.10 makes clear where he thinks that the division of labor lies:

> In any case, these two appear to initiate motion: desire (*orexis*) and reason (*nous*)—if one were to posit imagination (*phantasia*) as a sort of reasoning (*noêsin tina*). For many follow imaginings contrary to knowledge, and in the other animals there is neither reasoning (*noesis*) nor calculating (*logismos*), though there is imagination (*phantasia*).[19]

We have already looked at this passage, observing that this highly expanded sense of *nous* is probably not Aristotle's considered view.[20] It is worth noting also that Aristotle is using *phantasia* in an extended sense, whereby it *includes* perception. So really, Aristotle is saying that all three of the non-nutritive faculties discussed in DA III.9 have a role to play in initiating action.

In fact, Aristotle clearly distinguishes *two* different routes to action. The first involves desire and what we have termed *nous* in the broad sense (including practical deliberation). This path to action is uniquely human. The second path involves desire and *phantasia*.

[19] DA III.10 433a9–12, trans. Shields.
[20] See Chapter 9, note 3.

This is the only way in which action can be initiated in non-human animals, but it is also a path to action in humans. And, as Aristotle hints, the two paths to action can conflict in the case of human beings, when people "follow imaginings contrary to knowledge," which is clearly a reference to *akrasia* and weakness of will, to which we shall return.

The common thread in the two routes is, of course, desire, and most of DA III.10 is devoted to explaining the centrality of desire in initiating action. The basic psychology of action is set out early on in the chapter: "And desire, too, is always for the sake of something, since desire is for something, and this is the starting point (*archê*) of practical reason, while its final stage is the beginning of action."[21] So, what Aristotle seeks to explain is a psychological process that begins with the object of desire and ends in action.[22] The two routes that he has just identified are different pathways that both start and end at the same place.

At DA III.10 433a21, Aristotle states that one thing, and one thing only, initiates motion, but there is unclarity among the manuscripts as to what that one thing is. One family of manuscripts states that the one thing initiating motion is the faculty of desire (*to orektikon*), while another holds that it is the object of desire (*to orekton*).[23] This textual issue has generated no little philosophical controversy.[24] There seems to be room here, however, for a typically Aristotelian response. "Initiating action" is said in many ways. In one sense, when we ask what initiates action, we are asking, for any given action, what is the starting point for that action. The

[21] DA III.10 433a15–17, trans. Shields.

[22] The text is a little confusing at this point, because the word (*hautê*) that Shields translates as "this" is a feminine pronoun, which could only agree with *orexis*. It is clear from the context, though, that the pronoun refers to the object of desire (and so should, strictly speaking, be neuter). A more literal translation of the clause would be: "for that of which the desire is, that thing is the starting point."

[23] Valverde notes that, of the modern editors, only Jannone's 1966 edition opts for *to orekton* at 433a21, with both Ross editions, Siwek, and he himself adopting *to orektikon*.

[24] For further details, see, for example, Richardson 1992 at pp. 389ff. and Shields's commentary at pp. 355–360.

passage just quoted, together with discussion later on in DA III.10, makes it clear that, in *this* sense, what initiates motion is the object of desire, *to orekton*. If, however, we are asking, with respect to action in general, which of the faculties takes the lead in initiating action, the chapter as a whole makes it clear that, in *that* sense, what initiates motion is the faculty of desire, *to orektikon*. The two senses are connected, of course. The faculty of desire takes the lead in initiating action precisely because the starting point of every action is the object of desire. Aristotle himself makes this very point:

> It follows that what initiates motion is one in kind, the faculty of desire insofar as it is a faculty of desire. But first of all is the object of desire, since this initiates motion without being moved, by being thought or imagined.[25]

The question that Aristotle needs to answer, and the question to which he now turns, is how the faculty of desire, in conjunction with reason, *phantasia*, or both, takes the animal from the object of desire to the movement with which action begins. The key passage comes immediately after the one just quoted, which it explicates:

> Since there are three things, first, what initiates motion, second, that by which it initiates motion, and further, third, what is moved, and that which initiates motion is twofold, in the one instance being unmoved and in the other initiating motion while being moved: there is something unmoved, the good concerned with what can be done; something initiating motion while being moved, the faculty of desire (for what is moved is moved insofar as it is desiring, and desire, when in actuality, is a kind of motion).[26]

[25] DA III.10 433b10–12, trans. Shields.
[26] DA III.10 433a13–18, trans. Shields, with a punctuation typo corrected.

At first sight, this passage might seem to suggest that the faculty of desire is *exclusively* responsible for initiating action.[27] If that is Aristotle's view, then it is in tension with the argumentation in DA III.9, as well as with the division of labor proposed earlier in DA III.10. It is not clear that we have to take the passage this way, however.

Aristotle affirms that there are two ways of thinking about what initiates action. He repeats his earlier point, that the starting point of action is the object of desire, but instead of repeating the term 'object of desire,' he now refers to the object of desire as "the good concerned with what can be done" (*to prakton agathon*). We need to think about the object of desire, Aristotle is saying, not simply as an object, but rather as an object that is desired *as good*, as being something that is (or at least seems) good to us.[28]

In order to understand how objects can be desired as good (or: under the guise of the good), we have to go outside the realm of desire to perception, imagination, and/or reason. This is because an object can only present as good to an agent if it is perceived, imagined, or conceived in a certain way. Aristotle explicitly recognizes this at 433b12 (quoted above), where he points out that the object of desire initiates motion "by being thought of or imagined." And he implicitly recognizes it at 433b16–17 when he states that the faculty of desire both moves and is moved—objects cannot move desire directly, but only as perceived, imagined, or thought about. So, it is perception/imagination and/or reason that moves desire.

To understand how Aristotle is thinking about taking the object of desire under the guise of the good, it is helpful to look at two important distinctions that he draws in DA III.10. The first comes

[27] This is how it is read by Shields, for example, at pp. 359–360.

[28] In modern terminology, he has shifted from talking about the object of desire *extensionally* to think about it *intensionally*—as apprehended a certain way, or, to use Fregean terminology, under a certain mode of presentation.

in the middle of the chapter. It is the distinction between the good and the apparent good—between what is really good for the animal, and what merely seems good. The second appears right at the end of the chapter, where it almost looks like an afterthought. This is the distinction between two types of imagination—perceptual imagination and rational imagination. The second of these is more of a challenge than the first. The idea of rational imagination (*phantasia logistikê*) is at first sight rather puzzling, but it is not a one-off. A little further on, in DA III.11, he refers to deliberative (*bouleutikê*) imagination, which is restricted to rational (*logistikon*) animals. Clearly this is the same phenomenon. What makes it puzzling is that Aristotle has hitherto drawn a fairly clear distinction between *phantasia*, which operates on and with images, and *nous*, for which the basic currency is concepts/essences (either considered individually or as compounded into judgments), but now he seems to be combining them.

We can make sense of what Aristotle is up to if we remember that he is offering a very expansive account of perception. In modern terminology, perception for Aristotle has a rich content. Aristotle's understanding of perception and *phantasia* is clearly representational, as shown by the example in DA III.3 of the sun, which perceptually appears (*phainetai*) to be only a foot wide. But he also takes perception to be representational in a much more practical sense. Perception presents the environment as being a certain way, and as part of that it presents the environment as *affording* certain opportunities for action. We (and other animals) perceive objects in a way that can generate immediate affective and practical responses. That is one of the lessons to be drawn from the discussion of pursuit and avoidance in DA III.7. Moreover, as discussed in the context of DA III.2, perception is perspectival—part of what we see when we see the environment is how we are situated in it—we see objects as spatially located in relation to ourselves: within reach, within a couple of steps, within jumping height, and so on. In sum, our perception of the world is laden with practical meaning.

Aristotle did not work this basic idea out in detail, but it is highly likely that he saw it and that it underlies and unifies a number of apparently distinct lines of thought in the *De Anima* (and elsewhere).

It is to perception in this rich sense that Aristotle is referring when he talks about perceptual imagination. Aristotle's reason for calling it *imagination* is partly that he has an inclusive conception of *phantasia* that includes perception. More importantly, though, he is calling attention to the fact that using perception to navigate the environment is not a passive process, but rather involves actively manipulating mental images and memories. Part of what it is for an animal to see another animal as potential prey is for it to be able to *imagine* the movements that it might make to seize it, in the light of *memories* of similar encounters.

This type of perceptual imagination is common to human and non-human animals, and for that reason it cannot in any way depend upon the activities of *nous*. In particular, it cannot depend upon concepts or conceptual abilities. Making use again of more contemporary terminology, we might say that perceptual imagination has a nonconceptual content. That is to say, although an Aristotelian scientist might use a certain set of concepts to characterize the way an animal (human or non-human) represents the environment in perception, the animal can represent the environment in that way without possessing any of the relevant concepts. Again, while there is no word in Aristotle that he applies to perception and/or *phantasia* and that can be translated as "nonconceptual," it is plausible that his various theoretical commitments do suggest something like nonconceptual perception in this sense.

Perception with this type of nonconceptual content is common to human and non-human animals, and it is all that is available to creatures lacking *nous*. Possessing *nous*, however, makes available a different and richer way of perceiving the world, one that is informed by the perceiver's conceptual repertoire. Many modern philosophers have emphasized that conceptual abilities are directly exercised in perception (as opposed to being applied in thought to

raw perceptual data).[29] Acquiring a concept makes a difference in how one perceives the world, not just to the judgments one makes about it. It is to perception with conceptual content in this sense that Aristotle may be referring when he talks about rational (or deliberative) imagination. Here are two examples to clarify the distinction between (nonconceptual) perceptual imagination and (conceptual) rational imagination. A cat looking at a cushion might (nonconceptually) see a soft object that affords sitting and a pleasant doze, while the cat's owner seeing the same cushion (conceptually) sees the missing cushion matching the other two on the sofa that they have been looking for all morning. And the same cat, looking at a blue bird in the garden, might (nonconceptually) see something that affords entertaining sport and an enjoyable snack, while its owner (conceptually) sees the first of this year's bluebirds coming to nest. In each case, we have occurrent perceptions actively interacting with stored mental items—memories and quasi-perceptual imaginings in the one case, and concepts and conceptual memories in the other case.

Returning, then, to the object of desire, we have more tools to see how, in Aristotle's terms, the faculty of desire is moved, or, put more familiarly, how an object can be apprehended in a way that engages our motivations. One pathway is via perceptual imagination. The object, say a cushion or a bird, is perceived (nonconceptually) in a way that directly presents its relevance to an occurrent (typically bodily) desire, say sleepiness or hunger. The other pathway is via rational imagination. Here the object is perceived (conceptually) in a way that presents its relevance to those more complex, longer-range, reasoned desires that Aristotle collectively terms *wish* (*bouleusis*)—the search for the missing cushion, or the desire to sustain a breeding population of migrant bluebirds. In each

[29] For a prominent example, see John McDowell's *Mind and World* (McDowell 1994), which is deeply informed by his reading of Aristotle, particularly the ethical writings. However, McDowell firmly rejects the idea of nonconceptual content and has a correspondingly narrow view of non-human perception and cognition.

case it seems right to say that what is apprehended is an apparent good, which might or might not end up being genuinely good for the agent.

For non-human animals, then, the faculty of desire is engaged by the object of desire, as apprehended though the workings of perceptual imagination. There is, for Aristotle, nothing that could properly be described as decision-making for non-human animals. Instead, he paints in DA III.11 a picture of desires battling for supremacy, with the strongest winning out. We will come back to this important passage in the next section, because it is interwoven with further discussion of deliberative *phantasia* and the practical syllogism. For the moment, we should point out that Aristotle's account of how motion is initiated in non-human animals is complete *at the psychological level*. There remains a story to be told, of course, *at the physiological level*, which Aristotle sketches out in the latter parts of the *De Motu Animalium*, where he emphasizes heating and cooling around the heart, which is eventually translated into bodily movements via the (somewhat mysterious) connate *pneuma*. This physiological story, which is almost completely absent from the *De Anima*, is in broad outline the same for human and non-human animals.

But there remains a further piece of the puzzle, one confined to the human case. How does rational imagination engage with desire to initiate action in rational animals? What is the role of deliberation and practical reasoning? That takes us to the next section.

10.3 Thought and action

Aristotle's discussion of deliberation and practical reasoning in the *De Anima* is extremely compressed. It is primarily to be found in DA III.11, which is a very short chapter that also contains a brief discussion of appetite and *phantasia* in non-human animals. It is helpful to look at the discussion there in the context of parallel discussions in the *Nicomachean Ethics* and *De Motu Animalium.*

The following passage continues Aristotle's earlier discussion of deliberative *phantasia*:

> Hence, as was said, while perceptual imagination belongs to the other animals, deliberative imagination belongs to rational animals (since whether one is to do this or that is already the work of reasoning (*logismou*)—and it is necessary that measuring take place by one thing, inasmuch as one pursues what is greater and can, consequently, make one out of many images).[30]

Here Aristotle states that reasoning, measuring, and pursuing are all part of the work of reasoning (*logismos*), and that these are only possible because of the work of deliberative *phantasia* in "making one (*hen*) out of many images." But what is that one thing?

The grammar is consistent with the one thing being an image, so that the deliberative imagination would be making one image out of many. But it is not clear what sort of process Aristotle might be referring to, or what role it could play in action. Presumably for that reason, Ross goes a different direction and glosses the brief phrase as follows: "so that they are able to imagine a course of action which combines the advantages of two or more other courses."[31] However, there is no mention of courses of action elsewhere in the passage. An alternative suggestion, in line with the discussion in the previous section, would be that "making one out of many images" refers to the activity of conceptual thought, which provides the tools for integrating and comparing images, thereby making possible measuring, comparison, and rational deliberation. The one thing that is made, therefore, is a concept, and the overarching point that Aristotle is making is that measuring and deliberation

[30] DA III.11 434a5–10, trans. Shields.
[31] Ross 1961, p. 319.

cannot proceed without concept formation, conceptual perception, and conceptual imagination.[32]

The only details that DA III.11 contains as to how the process of "reasoning" and "measuring" take place are in the following passage, which gives a condensed presentation of the so-called practical syllogism, discussed in more detail in *Nicomachean Ethics* VII.3 and *De Motu Animalium* 7:

> Since the one conception (*hupolêpsis*) and proposition (*logos*) is universal, and the other is of what is particular (since one says that a certain sort of man must do such and such a thing, and the other says that *this* is such and such a thing, and *I* am that sort of man), this latter belief—not the universal one—initiates motion; or, both do, but this one is more at rest, and the second is not.[33]

The basic idea here is that what initiates motion is the combination of a universal proposition and something particular. The universal proposition specifies a given course of action for a particular type of agent in particular circumstances, but no such universal proposition can initiate motion unless "anchored" to the here and now by recognition that *these* are the right kind of circumstances; *I* am an agent of the appropriate type; and *this* is how such a person should act in these circumstances.

[32] Aristotle is here using a result clause (with *hôste*), which might seem to suggest, as in Shields's translation, that the "making one out of many images" is the result of measuring taking place by one thing, which would speak against the reading proposed above. It is worth noting, though, that, since *hôste* is followed by an indicative rather than an infinitive, the punctuation allows *hôste* to be treated more as a particle with the force of "therefore," "hence," or "however" (see Smyth 1956, §2274a). This in fact is how Hicks translates the passage, and could be accommodated with minor changes to Shields's translation, so that it reads: "inasmuch as one pursues what is greater and, consequently, it is possible (*dunatai*) to make one thing out of many images," or alternatively as "and, consequently, it is able (*dunatai*) to make one thing out of many images." The first option takes *dunatai* impersonally, the second makes its subject the deliberative imagination.

[33] DA III.11 434a16–21, trans. Shields.

In this passage, Aristotle talks of what specifies the particular circumstances as a belief (*doxa*), while in the *De Motu* he also characterizes it in cognitive terms as a proposition (*protasis*).[34] However, in *Nicomachean Ethics* VII.3, he is very clear that "anchoring" to the here and now takes place through perception: "The one opinion (*doxa*) is universal, the other is concerned with the particular facts, and here we come to something within the sphere of perception."[35] There is, of course, no inconsistency here. As emphasized above, the type of perception that Aristotle is discussing here is thoroughly conceptual. An Aristotelian agent sees *that* these are circumstances of such-and-such a type and that *he* is appropriately placed and the right kind of agent. The ensuing judgment or belief has the same, or a very similar, content to the perception from which it is derived.

One way of appreciating Aristotle's discussion is to note the similarities with those contemporary philosophers who think that there is an *essentially indexical* component to intentional action.[36] The idea here is that general knowledge and general prescriptions cannot lead to action unless the agent sees how they are connected to what *I* am capable of doing *here* and *now* ('I,' 'here,' and 'now' are all indexical pronouns). Aristotle puts the point in the *De Motu* by distinguishing two different (but interdependent) routes to action—one concerning the good (*tou agathou*) and one concerning the possible (*tou dunatou*).[37] The essential indexicals all have to do with what is possible. Only to the extent that we can perceive what it is possible for us to do in a given situation can we pursue what appears good to us.

Significantly, though, Aristotle's discussion of indexicality and the possible has a different emphasis from contemporary discussions. For modern philosophers, "I" is the quintessential

[34] See, e.g., DMA 7 701a12.
[35] NE VII.3 1147a25–26, trans. Ross/Urmson in ROT.
[36] The phrase "the essential indexical" is due to John Perry (1979).
[37] DMA 7 701a24–25.

indexical. The literature is full of examples of agents who are incapable of acting until they realize "I am the person who is φ." The most famous contemporary example is John Perry following a shopper with a leaking bag of sugar around the supermarket before realizing that he is that very shopper. A more dramatic classical example is Oedipus realizing that he is the slayer of Laius. Aristotle, characteristically, is more down-to-earth. As he explains in *De Motu* 7, the "I" component of action is usually too obvious for the agent to have to dwell on it ("if walking is good for man, one does not dwell upon the proposition 'I am a man' ").[38] Instead, he focuses on the importance of perception for anchoring action.[39]

One puzzling feature of the passage from DA III.11, in light of the preceding discussion, is that it makes no mention of desire, and seems to suggest that action is simply the product of a pair of beliefs—a universal proposition and a perceptually derived indexical belief. However, it should not be thought that Aristotle is suddenly proposing a route to action that is purely rational and does not involve desire at all. We need to be careful in how the universal proposition is understood. Aristotle is very clear in both the *De Motu Animalium* and the *Nicomachean Ethics* that the conclusion of the practical syllogism is action.[40] Plainly, therefore, the premises in the practical syllogism must be importantly different from those in a theoretical syllogism, the conclusion of which can only be a further proposition.

Having an (indexical) minor premise is part of what distinguishes a practical syllogism and primes it for action, so to speak. However, we also need to look at the major (universal) premise. In the passage at the end of DA III.11 we have been looking at, Aristotle certainly describes the major premise in very cognitive terms—as a

[38] DMA 7 701a26–27, trans. Farquharson in ROT.

[39] As we saw in Section 8.3, it is grist to Aristotle's mill that perception can be analyzed as having a self-specifying (indexical?) component.

[40] See DMA 7 at 701a7–13 and NE VII.3 1147a25–31.

proposition (*logos*), a conception (*hupolêpsis*), or a belief (*doxa*). It is important to recognize, though, that Aristotle is not introducing new conceptual machinery here. He is developing and refining his earlier discussion.

Two ideas from DA III.10 are particularly important in understanding what is distinctive about the major premise in the practical syllogism. First is Aristotle's claim, discussed in the previous section, that one way in which the object of desire (*to orekton*) initiates motion is by being thought about (*tô noêthênai*). It seems reasonable to take the resulting thought to be the major premise. If we then ask how Aristotle characterizes an object of desire being thought about in a certain way, it is natural to turn to the notion of *boulêsis* (typically translated as 'wish'), which appears once in DA III.9 and twice in DA III.10. Here is what he says about *boulêsis* in those places:

> DA III.9 at 432b5: *Boulêsis* is a type of desire that arises in the rational faculty (*to logistikon*).

> DA III.10 at 433a23–25: *Boulêsis* is a form of desire and whenever something is moved in accordance with calculation (*kata ton logismon*) it is moved by *boulêsis*.

It would seem that, at least in some instances and quite possibly in all, we need to understand the major premise of the practical syllogism as a *boulêsis*. This suggestion builds on John M. Cooper's discussion in a recent paper on the *De Motu* (Cooper 2020, developing ideas first proposed in Cooper 1975). Cooper is also puzzled by the fact that Aristotle does not *explicitly* include any motivational element in the practical syllogism and he proposes that it is there implicitly because the major premise is intrinsically motivational. We need to think about it as a rational desire, which might in several respects be a more accurate translation than 'wish' for *boulêsis*. He writes, commenting primarily on the *De Motu*:

> With appetites, the bodily discomfort that is a component of the desire, and thought, are separate and distinct psychological entities. In the case of wishes, Aristotle's account in *MA* clearly indicates, we are instead dealing with a single psychological entity, considered in two different aspects' the thought 'Every human ought to walk, and I am a human,' or equivalently 'I, a human, ought to walk,' is both a thought and a desire. That thought, by itself, with no aid from any additional force, gets the agent moving. To think assertively that you ought to walk (now) *is* to be moved to act. Considered as something that moves you to act, we can call it a *boulêsis*, a wish; but it is also simply a thought. There is one entity, with two 'beings,' two things that the single entity *is*: a thought, a desire. . . . In cases of non-rational desire, by contrast, there is always, besides the thought, some separate movement that initiates the action.[41]

This basic idea that a *boulêsis* is both a thought and a desire can be read with different emphases. Cooper would likely read it in an intellectualist way, as reflecting the strand in Aristotle's thinking that makes reason and reasoning primary.[42] But it can also be read with the emphasis on the conative, as pointing to a distinctively intellectual type of desire. The important point, which Aristotle brings out in the discussion of the practical syllogism in the *De Anima*, and which is also highlighted in the *De Motu*, is that rational desire requires only perception to lead to action (absent interfering factors that can lead to *akrasia* [weakness of will], as discussed in *Nicomachean Ethics* VII.3).

However, Aristotle's account is incomplete in one important respect. While he can plausibly be described as having given, by his lights, a complete account of the psychological antecedents of animal motion, there is a fundamental gap in his account of the psychological antecedents of human action. His discussion takes the

[41] Cooper 2020, pp. 384–385.
[42] That would be very consistent with his argument in Cooper 1975.

major premise of the practical syllogism, the *boulêsis*, as a given. Aristotle has nothing to say about where it comes from. In other words, there is almost no discussion in the *De Anima* of the mechanics of deliberation (*bouleusis*), or practical reasoning in general.[43] Aristotle does not remark upon the omission, still less explain it. This may be because the *De Anima* is operating at a high theoretical level. But it might also be that he saw deliberation and practical reasoning as topics more for ethics than for psychology, because he felt that an account of practical reasoning cannot be separated out from an account of right action. Certainly, the most comprehensive discussion of these matters is in the *Nicomachean Ethics*.

* * *

The discussion of the last part of DA III has focused on DA III.6–11. In DA III.6–7, Aristotle rounds out his treatment of *nous* in DA III.5–6, from which it follows very naturally, by moving from considering the constituents of thinking (the apprehension of essences, as explored in DA III.4) to considering truth-evaluable thoughts. This gives him the tools to complete his treatment of the capacities of the *psuchê* by exploring desire and its role in generating action, a discussion that begins in DA III.7 and is carried out in DA III.9–11, where Aristotle's emphasis is on the immediate antecedents of action. He outlines two pathways to action—one unique to humans and one common to human and non-human animals. The uniquely human pathway proceeds via a combination of *boulêsis* and deliberative imagination (which includes perceptions with what we would

[43] The word *bouleusis* does not appear in Ross's index to the *De Anima*, while the corresponding verb *bouleuesthai* only appears once and the adjective *bouleutikos* appears three times. To say that there is no theory of deliberation in the *De Anima* implies, of course, that the practical syllogism should not be viewed as a model of deliberation, or even a stage in deliberation. For arguments to that effect see, for example, Cooper 1975 and Corcilius 2008. For a contrary view (and an illuminating discussion of practical reasoning in Aristotle), see Price 2008.

now call conceptual content). The "common" pathway proceeds via desire and perceptual imagination (including perceptions with nonconceptual content). Aristotle's rich and suggestive discussion is one of the finest and most enduring sections of the *De Anima*.

Further reading

Nussbaum's pioneering edition of the *De Motu Animalium* with accompanying essays (Nussbaum 1978) has recently been complemented by Rapp and Primavesi 2020 in the Oxford Symposium Aristotelicum series, which contains a new edition and translation together with ten accompanying essays by leading scholars.

On Aristotle's theory of (human) action in general, Charles 1984 remains authoritative. Important recent book-length studies of Aristotle on the springs of action include Lorenz 2006 and Moss 2012, with both having interesting things to say about *phantasia*. The recent literature on *akrasia* in the *Nicomachean Ethics* is enormous. Lorenz 2014 is a good place to start.

Price 2008 and Corcilius 2008 offer contrasting interpretations of the practical syllogism, which Cooper 1975, part 1, places in the context of a more general discussion of Aristotle on deliberation (to the literature on which Moss 2014 is a good guide). Tuozzo 1994 and Whiting 2002 both discuss desire in Aristotle.

Aristotle's De Anima: A Guide

José Luis Bermúdez

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Afterword

José Luis Bermúdez

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The *De Anima* will never be Aristotle's most popular work, and other books in the *corpus* have had a greater impact on the history of philosophy and the history of ideas. However, it remains an ideal starting point for the serious study of Aristotle.

This is due in no small part to its intrinsic merits. The *De Anima* displays Aristotle's subtlety of thought and analytic acuity to great effect. It reveals him to be a sensitive reader of his predecessors. And, perhaps most importantly, it shows how his tendency toward system and structure rarely, if ever, trump his deep appreciation for the complexity of both the phenomena he studies and the language with which they are described—in short, Aristotle at his absolute best, a paradigm of philosophy.

At the same time, though, and hopefully this will have become apparent to anyone who has persevered this far, the *De Anima* is a gateway text for vast expanses of the *corpus aristotelicum*. Some brief illustrations:

- While written (largely) at the psychological level, it nonetheless points to, and sometimes presupposes, the physiological explorations pursued elsewhere. It would be natural to move from the discussion of generation and growth in DA II to *On the Parts of Animals* and *On the Generation of Animals*—and likewise from the discussion of perception and *phantasia* to the *Parva Naturalia*, particularly the *De Sensu* and the *De Memoria*.

- Aristotle's hylomorphism underpins both his general account of the *psuchê* and his detailed exploration of its capacities, in a ↳ way that leads naturally (as we saw in Chapter 4) to the early books of the *Physics* and the central books of the *Metaphysics*.

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- Thinking through the implications and presuppositions of the *De Anima*'s discussion of *phantasia* and animal motion takes the reader directly both to the *De Motu Animalium* and to the exploration of deliberation and practical reasoning in the *Nichomachean Ethics* and the *Eudemian Ethics*.

- The compressed and suggestive treatment of *nous* in DA III.4–5 opens up multiple vistas, to the theological in *Metaphysics* Lambda (XII) and *Physics* VIII, to the logical in the *Posterior Analytics* and the *Organon*, and to the treatment of the life of reason in Book X of the *Nicomachean Ethics*.

Hopefully, readers of this book will continue the journey.

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José Luis Bermúdez

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